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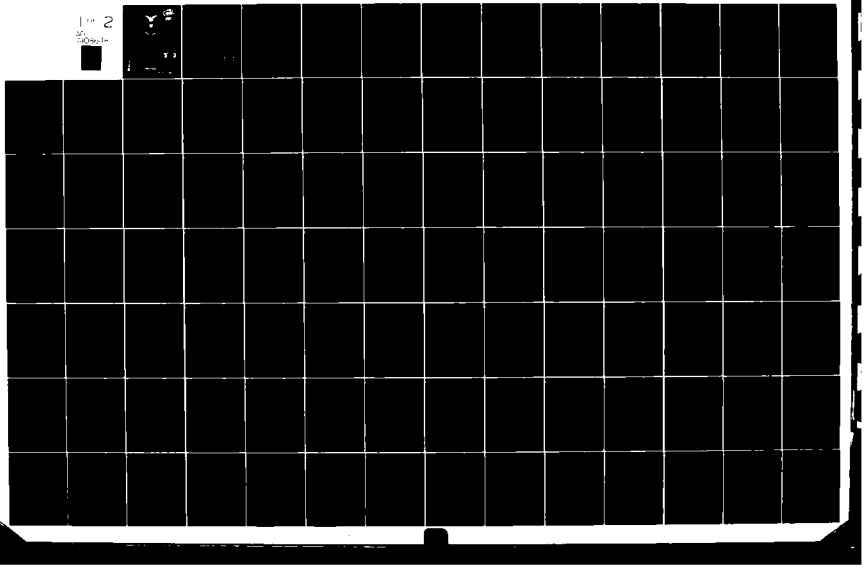

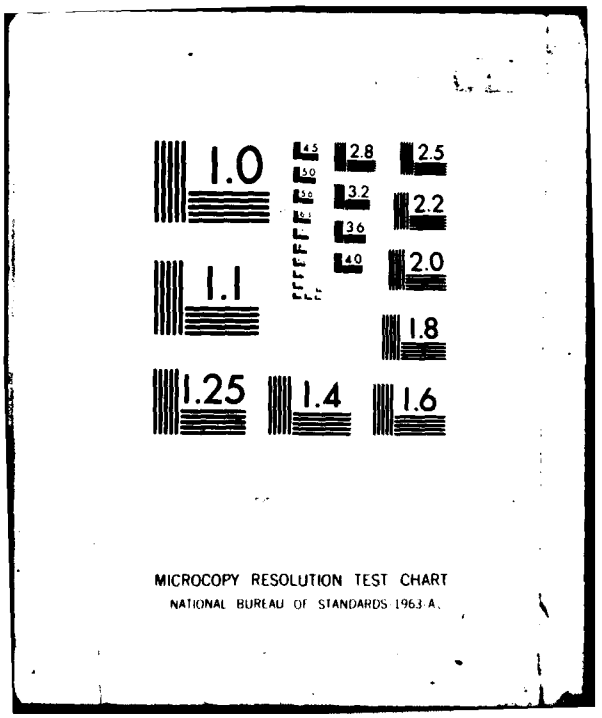
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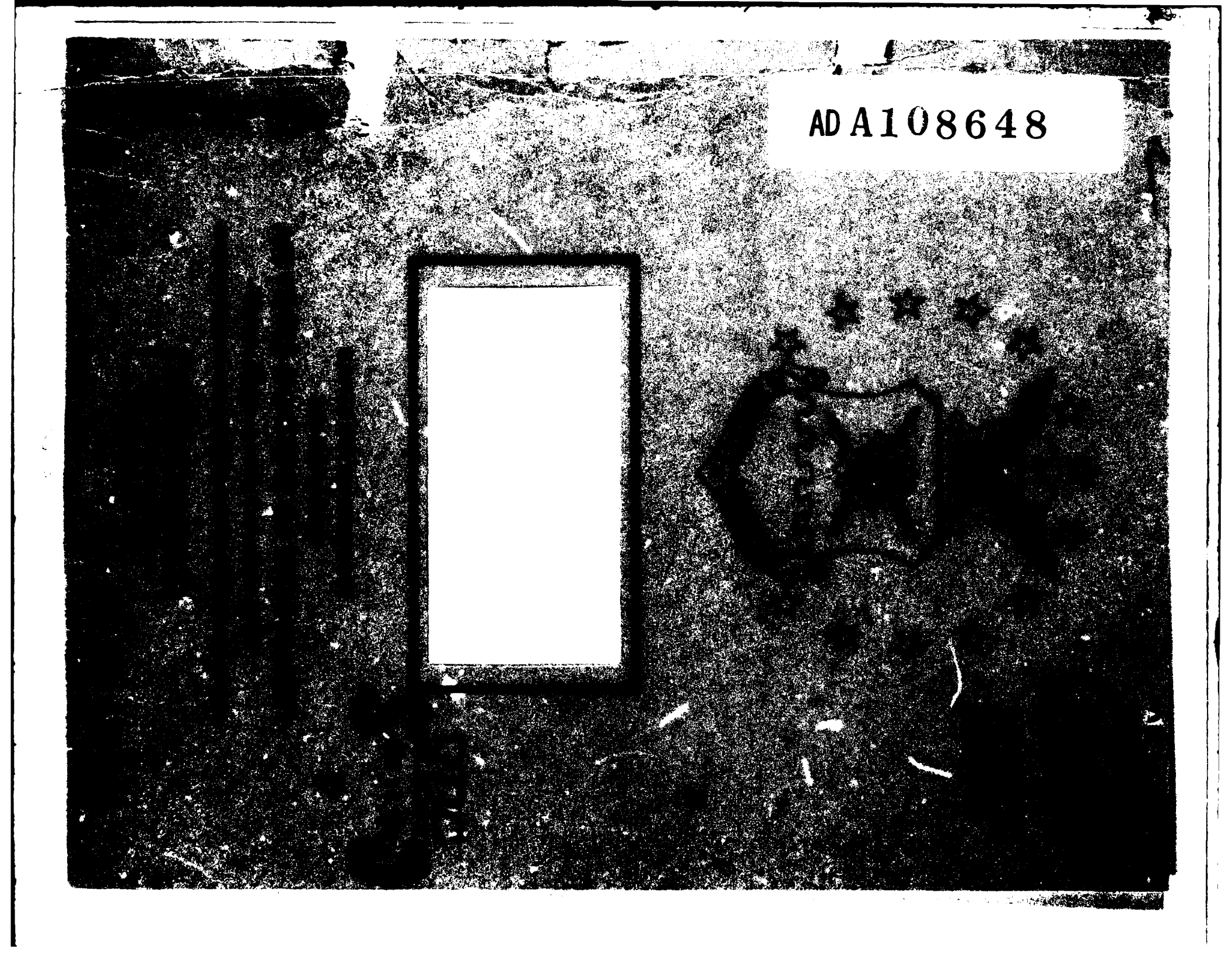

THE AIR FORCE ACQUISITION LOGISTICS DIVISION (AFALD): RELATIONSHIP OF ASPECTS OF MANPOWER TO MISSION PERFORMANCE

Thomas S. Gregg, Jr., GS-12
James T. Ronaghan, Jr., Captain, USMC

LSSR 44-81

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This thesis serves as a basis for determining percentage-based advanced academic degree personnel requirements within the large and diverse Air Force Acquisition Logistics Division (AFALD). The scope of this thesis was limited to an examination of AFALD manpower requirements and their relation, if any, to meeting AFALD organizational goals. This research effort attempted to determine if the AFALD could be recommended for use as the subject organization for study of an advanced academic degree percentage-based system. The authors concluded that the AFALD could be recommended for study.

LSSR 44-81

THE AIR FORCE ACQUISITION LOGISTICS DIVISION (AFALD): RELATIONSHIP OF ASPECTS OF MANPOWER TO MISSION PERFORMANCE

A Thesis

Presented to the Faculty of the School of Systems and Logistics

of the Air Force Institute of Technology

Air University

In Partial Fulfillment of the Requirements for the

Degree of Master of Science in Acquisition Logistics Management

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June 1981

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has been accepted by the undersigned on behalf of the faculty of the School of Systems and Logistics in partial fulfillment of the requirements for the degree of

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DATE: 17 June 1981

Ronald A Blackledge
COMMITTEE CHAIRMAN

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CHAPTER I

INTRODUCTION

For many years, organizations have been concerned with predicting and subsequently meeting manpower requirements in light of a number of variables, such as their existing manpower, loss of this manpower over time, promotability of present personnel, and future plans for organizational expansion. In both the civilian and military sectors, management of personnel to best meet organizational goals is vitally important. In an era of advanced and rapidly changing technology, the availability and the utilization of technically qualified and technically proficient people is of particular interest both to top-level military and civilian decision-makers.

This thesis serves as a basis for determining percentage-based advanced academic degree personnel requirements within the large and diverse Air Force Acquisition Logistics Division (AFALD). The scope of this thesis will be limited to an examination of AFALD manpower requirements and their relation, if any, to meeting Air Force Acquisition Logistics Division organizational goals. However, an understanding of advanced academic degree (AAD) concepts and the Air Force position regarding AAD utilization is central in

relating this effort to current as well as future AAD thesis efforts.

The Air Force recognizes that if

> . . . the Air Force is to maintain its professional and technical competence, each career area requires some proportion of its officers to possess the academic background normally--and universally--associated with the attainment of an advanced degree in a field relevant to the functional area [6:1,Atch 1].

Historically, the USAF has allocated advanced academic degree personnel by designating AAD requirements to particular positions by means of a billet validation system. A billet validation system is one method of personnel allocation whereby advanced academic degree personnel requirements are established and filled on the basis of job classification. However,

> A recurrent theme of Congressional concern regarding service graduate education programs has been the effective utilization of advanced academic degree holders . . . [6:3,Atch 1].

The concern is that:

> . . . billet validation inherently restricts the concept of advanced academic degree utilization to service in a position requiring an advanced degree [6:3, Atch 1].

The importance of proper USAF utilization of advanced academic degree personnel is magnified when one considers the shortage of technically proficient personnel. Commenting on the current unavailability of technically proficient labor, Nelson Heyer said:

> The engineer classification, which I would broaden to include not only engineers but also scientists and mathematicians, is another category of continuing

concern. This is a high-cost labor classification, whose supply is limited, depending primarily on the training capacities of the national education system . . . .

Although people with general science training have been equipped in some circumstances to handle specific engineering assignments, it is usually not financially feasible to train engineers internally. Therefore, the demand is usually filled either from the college campus or by recruiting in experienced labor markets [8:106].

Statement of the Problem

The Air Force must effectively and efficiently determine how best to implement a system to optimally identify, acquire, and utilize the personnel resources at its disposal, including advanced academic degree holders.

A recurrent theme of Congressional concern regarding service graduate education programs has been the effective utilization of AAD holders. The Air Force's contention is that:

> . . . within the closed personnel system of the services and in consideration of the progressive nature of all career fields and academic disciplines, there is a need for a continuing infusion at all grade levels of officers with recent degrees from civilian centers of excellence [6:2,Atch 1].

In concert with this contention, a Headquarters USAF/MPPE letter (6:1) tasked the Air Force Institute of Technology (AFIT) to gather preliminary data concerning means of implementing a new percentage-based system for determining graduate education personnel requirements in the USAF. This percentage-based system will establish percentage goals within each USAF career field for officers

possessing advanced degree education. AAD requirements would be designated to functional work centers, rather than being tied to individual positions (6:3,Atch 1). In detail:

> The new system will consist of two interrelated sets of procedures, one for determining requirements and one for insuring the effective utilization of advanced academic degree (AAD) holders. The identification of requirements will be based on educational standards and goals for each career field; utilization will be effected and monitored by designation AAD requirements to the functional work center [6:1,Atch 1].

This thesis is one part of a two part effort to identify the best means by which to implement a percentage-based system for determining graduate education personnel requirements within the USAF. The logistics career field was selected, and AFALD consented to test the new percentage-based personnel requirements determination system (6:1). This research effort will attempt to validate current Air Force Acquisition Logistics Division (AFALD) manpower requirements as they relate to the overall AFALD mission. Since it is important for organizations to determine what manpower requirements contribute to attainment of organization goals and organizational longevity, this effort will aid in defining and implementing a percentage-based system for the determination of organizational personnel requirements Air Force wide. The Air Force Acquisition Logistics Division was chosen for study because it is an organization representative of the USAF logistics career field.

A second thesis effort will attempt to identify criteria to be used in determining the AAD personnel

percentage requirements of specific USAF organizations. This second thesis effort will also attempt to determine the optimum percentage of graduate degree personnel to be allocated to each career field.

Background

Since this thesis examines aspects of the Air Force Acquisition Logistics Division, the reader must understand the events that helped form this organization, which now implements a USAF life-cycle cost (LCC) procurement concept.

Both government and industrial purchasing are concerned with buying quality products, in the correct quantity, at an acceptable price, from a qualified source, at the appropriate time (8:541). Government purchasing, however, frequently involves special considerations usually not applicable to the private industry sector.

In fiscal year 1961 the Air Force realized the need for greater consideration of logistics elements in the evaluation and acquisition of future systems, and at this time recognized ". . . that the dollar was the dominant factor dictating capability and that logistics feasibility should be studied and analyzed thoroughly [2:11]." However, any concept of acquisition logistics as one means of reducing system life-cycle cost was only dimly perceived and not yet institutionalized.

Mr. Burke noted (2:Ch.2) that in late 1961, the Air Force, in an attempt to realign functional procurement

responsibilities, formed the Air Force Logistics Command (AFLC) and the Air Force Systems Command (AFSC). The Logistics Command assumed support responsibilities for operational weapons systems, while Systems Command's primary concern was with procurement and research and development (R & D) of systems prior to active inventory introduction. Even with reorganization, AFLC did not fully develop a consistent policy or role for impacting logistics considerations during the development and acquisition of new weapons systems.

In July 1962 the joint AFLC/AFSC regulation, AFLCR 80-5/AFSCR 82-1, defined differences between acquisition and operational engineering, noting that

> . . . AFLC's main engineering task was to develop at least a minimal capacity to "permit the assumption of Air Force Engineering responsibility for systems and equipment at the end of the acquisition" [2:12].

With the advent of Department of Defense Directive 4100.35, an Integrated Logistics Support (ILS) concept was emphasized throughout Department of Defense agencies concerned with weapons system development and procurement (2:13). The directive placed additional emphasis on assuring effective logistics support of weapons systems and equipment by requiring systematic planning, acquisition processes, and management throughout the system acquisition phases, while identifying logistics support as a major design consideration (2:13). Again, however, ". . . the Air

Force tended to view ILS as part of the systems engineering concept arising from the 1961 reorganization [2:13]."

By the end of the 1960's, however, the system acquisition arena began to change within the Department of Defense (DOD), and ". . . Air Force planners and logisticians noted a significant monetary trend [2:13]." They noticed that prior to fiscal year 1968, system operating costs were much less than weapons systems investment costs. However, after 1968, operating and support costs escalated, with smaller proportions of DOD funds allocated for the acquisition of new weapons systems and equipment (2:13).

In 1972, Air Force Regulation 800-8 (AFR 800-8) established a Deputy Program Manager for Logistics (DPML) in the System Program Office (SPO) for each Air Force major system acquisition, ". . . requiring the DPML to prepare Integrated Logistics Support Plans (ILSPs) for major systems [2:14]." Although the establishment and filling of DPML positions in each System Program Office provided one method of introducing logistics considerations into the early stages of the acquisition process, there were indications that ". . . no definitive direction was given for producing and executing the ILSP as an integral part of the overall acquisition process [2:14]."

> In May of 1973, the USAF Auditor General advised that HQ AFLC was improperly organized to support acquisition programs. He recommended that Air Force Logistics Command establish a separate organization within the headquarters ". . . to direct and coordinate all of the acquisition support programs within the command" [2:15].

Following several studies and reports conducted in 1973 (2:15-16), HQ AFLC created a Deputy Chief of Staff (DCS) level office called Acquisition Logistics (2:16), signalling the first major Air Force step in revising the traditional weapons system acquisition philosophy. Emphasis was now being directed to the importance of responsibly managing escalating system operating and support (O & S) costs, as well as system acquisition costs.

Air Force interest in properly managing the system acquisition process to reduce system life-cycle costs continued through 1975, and was manifested in various studies and proposals aimed at improving management techniques (2:16-26). In late 1975, a Systems and Resources Management Group (SRMAG), chartered by the Air Force Chief of Staff and chaired by Lieutenant General Joseph DeLuca, presented a report to the Chief of Staff. It contained thirty-seven management proposals designed to develop improvements in the areas of system management and resource utilization (2:18). As a result of this report, General Hails, DCS/Systems and Logistics, advised the Chief of Staff:

> We must now elevate the business of systems acquisition to a higher order than its current sub-optimal orientation to the front-end aspects of research and development--albeit these are certainly vital considerations. The process of systems acquisition must be perceived, understood, and organized to reflect the real life fact that it embraces not only advocacy and engineering development but the other critical disciplines of procurement, contracting, budgeting, financial management, maintainability, reliability, supportability, mobility and legal sufficiency [2:27].

After many months of continuing study and recommendations to the Chief of Staff on how best to manage costs of major systems (2:28-49), the Air Force Acquisition Logistics Division (AFALD) was created, and began operation 1 July 1976. The Air Force now had institutionalized its resolve to reduce ownership costs of weapons systems.

Air Force Logistics Command Regulation 23-17 (10:Ch.2-5) described the AFALD as one organizational component of the Air Force Logistics Command. It comprises thirteen deputates or offices. Of these, seven are major staff offices and are located at Wright-Patterson AFB, Ohio. These seven major AFALD offices are:

Deputy for Strategic Missiles, Space and Electronic Programs (LW);
Deputy for Aeronautical and Armament Programs (SD);
Deputy for Contracting and Manufacturing (PM);
Deputy for Engineering and Evaluation (PT);
Deputy for Acquisition Plans and Analysis (XR);
Deputy for KC-10 (YT);
Deputy for TR-1 Reconnaissance Aircraft (YJ)
(12:Ch.2-5).

AFALD personnel also provide joint manning with the Aeronautical Systems Division (ASD) for the Productivity, Reliability, Availability and Maintainability (PRAM) Program Office, and the Deputy for Avionics Control (AX) (12:Ch.4,7).

AFLCR 23-17 describes the AFALD mission as follows:

> The mission of the Air Force Acquisition Logistics Division is to improve USAF force readiness and reduce life cycle costs by challenging requirements and assuring consideration of supportability, reliability, and maintainability during the design, development,

and production process of weapon system acquisition; and to direct acquisition programs which use already developed systems to meet operational needs [12:1-1].

AFALD principal deputate mission responsibilities are as follows:

Deputy for Strategic Missiles, Space and Electronic Programs (LW) serves as the principal interface between AFLC and those AFSC system program offices (SPOs) having responsibility for strategic missiles, space, and electronics programs. Personnel from this deputate provide logistics expertise and manpower throughout the acquisition phases for weapons systems and equipment assigned to program offices primarily located at Electronic Systems Division (ESD). After initial analyses and estimates have been developed and an acquisition plan completed for a new weapon system, personnel in the collocated AFALD support office assist the AFSC program manager in developing tailored logistics support plans to achieve readiness objectives (12:3-1).

Deputy for Aeronautical and Armament Programs (SD) provides logistics expertise and resources to weapon systems, equipment, and program offices in the Aeronautical Systems Division (ASD), Wright-Patterson AFB; the Armament Division, Eglin AFB; and the Joint Cruise Missiles Project Office, Washington, D.C., throughout the acquisition phases. Deputy Program Managers for Logistics (DPMLs) collocated in the support office assist the AFSC program manager in developing tailored logistics support plans to achieve

readiness objectives, after they have completed initial analyses and acquisition plan estimates for the assigned weapons system (12:8-1).

Deputy for Contracting and Manufacturing (PM) is responsible for the contracting function for systems/equipment assigned to AFALD. The PM organization serves as a contracting staff, performing the contracting committee functions of centralized pricing support, contract review, approval, and distribution. The organization also assists with AFSC systems/equipment procurement by participating in business strategy and procurement evaluation panels to ensure that contracts include enforceable logistics provisions (12:5-1).

Deputy for Engineering and Evaluation (PT) is responsible for improving the exchange of information between using commands, AFLC, and AFSC on technical design and performance capability of weapons systems. This deputate also provides assistance in logistics planning and incorporation of logistics requirements into contracts for programs at the earliest program phase. It is also responsible for the Air Force Packaging Evaluation Agency (AFPEA) and the Engineering Data Support Center, both located at Wright-Patterson AFB (12:6-1).

Deputy for Acquisition Plans and Analysis (XR) initiates, develops, and implements acquisition logistics policies, plans, procedures, and techniques to assure

accomplishment of the AFALD mission. These activities include the areas of life-cycle cost, logistics support analysis, repair level analysis, and provisioning. This office also integrates the work of other staff offices on common goals and objectives and is responsible for developing initiatives to improve the quality of logisticians and their career patterns (12:9-1).

Deputy for KC-10 (YT) has total program management responsibility for acquisition and support of the KC-10 Extender Advanced Tanker Cargo Aircraft system. The KC-10 Program Office is a jointly manned organization with both AFLC and AFSC personnel resources (12:11-1).

TR-1 Program Office (YJ) has total program management responsibility for the acquisition of the airframe, engines, and support for the TR-1 reconnaissance aircraft (12:10-1).

Research Objective

As a parallel effort for determining percentage-based advanced academic degree personnel requirements within the large and diverse AFALD organization, this research effort will be divided into two parts. The first objective will be to investigate AFALD personnel requirements in terms of education, skill areas, Air Force Specialty Codes (AFSCs), and civilian General Schedule (GS) skill codes, and number.

Second, an attempt will be made to determine if these AFALD personnel requirements are correctly allocated

throughout the AFALD organization to realize mission goals in the most effective and efficient manner.

From this, an attempt will be made to determine whether the major policy goals and organizational functional statements of AFALD are consistent with the types and numbers of people in the AFALD organizations that are charged with the general AFALD mission.

It should be pointed out that this type of in-depth analysis of the AFALD is highly important if this organization is to be used to model the percentage-based system of AAD allocation Air Force wide. There will most certainly be some differences between organizational manning vis-a-vis advanced academic degree requirements even at comparable levels. By fully describing the AFALD in terms of skill codes, overall manning levels, and advanced academic degree billet manning, a better basis for comparison is allowed.

Research Questions

The following specific questions are to be answered:

Research question one: Is the AFALD manned to its specified levels? If the organization is found not to be manned to the levels specified, what are the major shortages or overages by AFSC?

Research question two: To what degree are AFALD personnel filling organizational billets which match their specific skill codes?

Research question three: Are the skill codes of AFALD billets appropriate for performance of those tasks necessary for AFALD organizations to meet their primary formal and informal organization mission responsibilities?

Research question four: To what degree are the educational requirements, as coded by AAD billets, filled by personnel whose personnel codes have those AAD billet identifiers?

Research question five: To what extent is the AFALD civilian-to-military personnel ratio in accordance with USAF-established guidelines?

Research question six: To what degree do actual personnel grades match the AFALD grades specified for each job position?

Scope and Limitations

The missions and personnel requirements of four AFALD offices, Management Support (DA), Resources Control (MO), Public Affairs (PA), and History (HO) parallel those of other Air Force organizations. This thesis will not address these four AFALD offices. The two joint AFALD/ASD program offices--PRAM Program Office (AFALD/RA) and the Deputy for Avionics Control (AFALD/AX)--will not be included, since for this study, only AFALD mission-unique organizations are being considered.

Appendix A, AFALD Organization, Manning and Directory Chart, is provided for reference.

There are also a number of satellite AFALD organizations, such as deputy program managers for logistics (DPML), and integrated logistics support offices (ILSOs), which are collocated within system program offices (SPOs) at other Air Force installations. For purposes of this study, these organizations will not be examined individually to answer the research questions posed. The philosophy for organizing and manning individual DPMLs/ILSOs is assumed to be common throughout these organizations. Therefore, findings obtained in the study of the DPMLs and ILSOs located at Wright-Patterson AFB will be assumed to be representative of satellite DPMLs and ILSOs located at other Air Force bases (4).

CHAPTER II

RESEARCH METHODS

Introduction

This chapter is devoted to the research instrument and to the research methods. It will detail the techniques used in collecting and analyzing data pertinent to the study. It will also serve to define and limit both the population and aspects of the population being studied.

Population

AFALD Personnel

The Air Force Acquisition Logistics Division (AFALD) population consists of both civilian and military personnel. For the purpose of this study, civilian employees are defined as full-time U.S. Civil Service employees permanently assigned to the AFALD. These include both General Schedule (GS) and Wage Grade (WG) civilian employees. Part-time, temporary, and overhire employees will not be included because they are excluded from the AFALD Unit Manpower Document (UMD) data.

Military personnel are defined as all active-duty individuals permanently assigned to the AFALD. This group includes both officer and enlisted personnel.

To determine what mix of civilian and military personnel comprises the AFALD, a civilian-to-military ratio will be examined. The civilian-to-military ratio is that ratio of full-time AFALD civilian employees, as previously defined, to permanently assigned military personnel within the AFALD.

Skill Codes

Skill codes are alphanumeric designators which define an individual's specific job type. For military personnel, both officer and enlisted, skill codes are specified as Air Force Specialty Codes (AFSC), and are defined in Air Force Regulation (AFR) 36-1. Civilian employee skill codes are designated as "position series" and are defined in Office of Personnel Management Position/Classification Standards manual for General Schedule (GS) employees, and in the Job Grading System for Trades and Labor Occupation manual for Wage Grade (WG) employees.

AFALD Organization Billets

The term "organizational billets" is synonymous with "organizational authorizations," which are defined for each Air Force organization by HQ USAF.

Assumptions About the Population

The AFALD population, as defined, is recognized as a dynamic one (i.e., the population is continually changing).

However, for purposes of this study, it is assumed to be static at the point in time of the research effort, to control the parameters of the study. Only those deputates previously defined will be considered as part of the AFALD.

Research Site

The Air Force Acquisition Logistics Division headquarters is located at Wright-Patterson AFB, Ohio. For the purposes of this study, research sites will include only those AFALD organizations physically located at Wright-Patterson AFB.

A number of satellite AFALD organizations such as deputy program manager for logistics (DPML) offices and integrated logistics support offices (ILSOs) are collocated within system program offices (SPOs) at other Air Force installations. For purposes of this study, as was previously mentioned, these organizations will not be examined individually to answer the research questions posed. The philosophy for organizing and manning individual DPMLs and ILSOs was assumed to be common throughout these organizations (4). Therefore, findings obtained in the study which pertained to the DPMLs and ILSOs located at Wright-Patterson AFB were assumed to be representative of these satellite organizations.

Instrument Validity

Webster (14:980) defined validity as the quality or state of achieving a conclusion that is correctly derived from certain premises, or the state of being well-grounded. In experimental design, validity consists of two distinct concepts of primary concern to a researcher attempting to achieve satisfactory results. These two important concepts are internal and external validity. Internal validity refers to the criterion that an experimental treatment is, in fact, the causal factor for a specific set of experimental conditions. External validity refers to how extensively, beyond the experimental setting, a treatment effect can be generalized (3:5).

Internal Validity

Support for the validity of data received by our survey questionnaire was ensured through a variety of techniques.

First, questions were constructed carefully and systematically. All questions were reviewed critically by competent and knowledgeable AFIT instructor personnel. These reviews were designed to eliminate inherent question bias and to ensure appropriateness of content.

Second, responses to the questions contained in Appendix B were based upon a five point Likert-type scale, and for purposes of this research effort, considered

interval level data. We used a Likert-type scale format because it is a proven method, it allows for statistical manipulation of ordinal level data, and it is reproducible. Also, use of the Likert-type response set met the level of analysis requirements, in terms of statistical preciseness. That is to say that the information garnered through the distribution of the questionnaire did not lend itself to detailed and precise statistical analysis, and if so attempted, would certainly have provided questionable research results and conclusions.

Third, in order to capture respondent information not suited to a Likert-type response set, a comment section was provided for each survey question.

Fourth, questionnaires were individually sealed, addressed, and mailed to supervisors to ensure minimal bias in questionnaire distribution.

This research effort contained two types of data, quantitative and qualitative. Quantitative data derived from the Unit Manpower Document (UMD) and the AFALD Position Management File (PMF) is standardized throughout the Air Force. These demographic data were used to develop descriptive statistics about the AFALD population, such as ratios expressed as percentages, means, standard deviations and correlations. These standard outputs provide the Air Force manager with the information necessary to make management

decisions. As such, these outputs are considered valid and reliable for the purposes of this study.

The qualitative questions contained in Appendix B were used to determine the personal opinions of respondents concerning appropriateness of skill codes to accomplish tasks, perceived differences between formal and informal tasks, educational credentials required for job positions, and appropriateness of the civilian-to-military personnel ratio.

External Validity

The purpose of this research effort is to determine whether the AFALD is representative of intermediate-level USAF organizations, so that it can serve as the standard for implementing a percentage-based system for allocating advanced academic degree (AAD) personnel Air Force wide.

The AFALD was selected for study because of the large number and wide variety of AFSCs resident within the organization, including engineering AFSCs. This characteristic of the AFALD increased the likelihood of its being representative of other organizations comprised of some of these AFSCs.

Also, as previously mentioned, because the Unit Manpower Document (UMD) and the AFALD Position Management File (PMF) are standard throughout the Air Force, we considered these documents unbiased estimators of the population under study. If bias did exist, we assumed that it

was uniform throughout the Air Force. Within the constraints and limitations of this study, the results of this analysis, using the data previously mentioned, we feel, is representative of the AFALD. Therefore, the conclusion we draw from the data we obtained from these documents is generally representative of other USAF organizations.

The research questions put forth are designed to form a knowledge base which will help determine whether the AFALD is indeed representative of other USAF intermediate-level organizations. These questions and their answers allowed us to make valid generalizations concerning the representability of the AFALD to other USAF intermediate organizations because these questions deal with criteria of common concern to intermediate level organizations within the Air Force.

For instance, research question one determined the AFALD manning levels to include overages and shortages, if any, by AFSC. Research question two determined the degree to which the skill codes of the AFALD personnel matched the specified billet AFSC. Research question three determined the degree to which the AFALD personnel skill codes were appropriate for performance of formal and informal organization tasks. Research question four determined the degree to which personal educational credentials matched job-required educational credentials. Research question five determined the extent to which the AFALD civilian-to-military personnel

ratio was in accordance with USAF established guidelines. Research question six determined the degree to which the AFALD actual personnel grades matched specified position grades.

Design to Answer Research Questions

To determine whether or not the major policy goals and organizational functional statements of the AFALD are consistent with the types and numbers of people in the AFALD organizations charged with the general AFALD mission, we address six research questions and analyze their answers.

Research Question One

Is the AFALD manned to its specified levels? Manning levels are determined and assigned in accordance with AFM 26-1. For purposes of this question, "manned" refers to the total number of previously-defined, full-time civilian and military personnel permanently assigned to the AFALD. The concept of "manning levels" refers to the ratio of on-hand, full-time AFALD personnel versus AFALD personnel authorized in the Unit Manpower Document (UMD), this ratio being expressed as a percentage.

The Unit Manpower Document (UMD) is a printed listing of the unit authorization file (UAF) for reference and file maintenance. The UAF is a computer file reflecting distribution of Air Force manpower allocations into a finite structure of authorizations (USAFMPP-7, 3 Aug 79) (13).

We answered this question by examining both the manning level authorized for the AFALD in the UMD Authorization File and the actual number of AFALD personnel currently manning the organization as listed in the Assignment File. The organizational components of the AFALD which we examined to determine the AFALD strata level and aggregate manning levels were the Deputy for Strategic Missiles, Space and Electronic Programs (LW), the Deputy for Aeronautical and Armament Programs (SD), the Deputy for Contracting and Manufacturing (PM), the Deputy for Engineering and Evaluation (PT), the Deputy for Acquisition Plans and Analysis (XR), the TR-1 Program Office (YJ), and the Deputy for the KC-10 (YT). In addition to identifying the AFALD strata manning levels and the AFALD aggregate manning levels, we examined and compared the actual manning level for the AFALD, expressed as a percentage, and the manning level specified for organizations Air Force wide.

Research Question Two

To what degree are AFALD personnel filling organizational billets which match their specific skill codes? To determine the answer to this question, we compared the organizational billet skill codes authorized for each organization we defined as comprising the AFALD, with the actual skill codes filling these organizational billets. We used UMD and other AFALD personnel data to determine whether AFALD

personnel were filling organizational billets which required their specific skill codes. For purposes of this question, which is really a subset of research question one, we considered a match to have occurred when a person filling an organizational billet carried an AFSC as specified for the billet. Analysis of UMD and other AFALD personnel data allowed us to compute the percentage of AFSC matches by strata level, for the aggregate AFALD, as well as matches by AFSC.

Research Question Three

Are the skill codes of AFALD billets appropriate for performance of those tasks necessary for AFALD supervisors to meet their primary formal and informal organization mission responsibilities?

Supervisors at the command section, deputate, directorate, division and branch levels of the AFALD were asked to answer a series of survey questions to determine if the skill codes of the billets within their organizations were appropriate for meeting their organization's formal mission requirements as defined in AFLCR 23-17. These supervisory personnel were also asked whether personnel skill codes were appropriate for meeting day-to-day organization task requirements. The answers we obtained from these personnel established, for the purposes of this study, whether AFALD personnel skill codes appropriately matched organizational

formal and informal mission requirements and responsibilities, and to what degree.

In order to ensure the validity of this research question, the respondents were asked whether they were familiar with the formal mission responsibilities of the organizations they supervised, as defined in AFLCR 23-17.

In order to determine whether supervisors clearly differentiated between their organization's formal and day-to-day tasks, and to what extent, survey questions five and six were included in the questionnaire. Survey question five sought to determine if supervisors perceived a difference between the formal mission responsibilities of the organization they supervised, and the actual day-to-day organization's tasks. Survey question six asked supervisors if they considered formal, or informal, tasks were more important, and which consumed the most time.

Research Question Four

To what degree are the educational requirements, as coded by AAD billets, filled by personnel whose personnel codes have those AAD billet identifiers? We used UMD and other AFALD personnel data to determine whether personnel AAD codes matched AAD coded billets. We considered a match to have occurred whenever personnel carried the AAD code specified for the billet.

When personnel without an advanced academic degree were found filling an AAD-coded billet, we determined

whether the job experience of the individual filled the AAD educational requirements of the billet. If so, a match was considered to have occurred. We considered a mismatch to have occurred whenever personnel who filled an AAD slot carried an AAD code different from the code specified for the slot, or had no AAD code whatsoever. Then we made a determination of the relative impact of mismatches in terms of problem-solving, analysis, policy formulation, synthesis, and evaluation capabilities.

Research question four, then, determined the percentage of AAD code match for all AFALD AAD-coded billets.

Research Question Five

To what extent is the AFALD civilian-to-military personnel ratio in accordance with USAF-established guidelines? To determine the answer to this question, we compared the AFALD organizational civilian-to-military personnel ratio (extracted from UMD data) to the Air Force ratio guidelines. If the AFALD civilian-to-military personnel ratio was significantly different ($\pm$ 10%) from the Air Force guideline, we considered a personnel ratio inequity to exist.

Similarly, we analyzed survey questionnaire responses to determine to what extent AFALD supervisors, at different levels throughout the organization, considered the AFALD civilian-to-military personnel ratio appropriate for meeting organizational responsibilities. This analysis

provided an indication of supervisor perceptions regarding the AFALD civilian-to-military personnel ratio existing at different levels throughout the AFALD organization.

Research Question Six

To what degree do actual personnel grades match the AFALD grades specified for each job position? "Grade" is defined to mean military rank or civilian civil service grade. We compared the organizational billet grade requirements that were authorized for each strata level we defined as comprising the AFALD, with the actual grade of AFALD personnel filling AFALD organizational billets. UMD and other AFALD personnel data were used to determine whether AFALD personnel were filling organizational billets that required their specific grade. We considered a match to have occurred whenever personnel who filled an organizational billet were within one grade level lower or higher than that grade level specified for the particular organizational billet, with the exception of the GS-7/GS-9, and GS-9/GS-11 grade difference which we considered a match because civilians are normally promoted directly from GS-7 to GS-9, and from GS-9 to GS-11. Analysis of UMD and other AFALD personnel data allowed us to compute the percentage of grade matches within the AFALD.

Data Collection

Data collected were both quantitative and qualitative. Quantitative data were derived from the AFALD Unit Manpower Document (UMD) and the AFALD Position Management File (PMF). We used this quantitative data, extracted from the two sources, to develop descriptive statistics about the AFALD population. Quantitative data were specifically derived to help answer research questions one, two, four, five and six. Qualitative data were derived by one hundred percent sampling of command section, deputate, directorate, division, and branch heads to help answer research questions three and five.

Relevant Population

The population of interest consisted of all full-time Wage Grade (WG), General Schedule (GS), and military personnel permanently assigned to previously specified AFALD organizations located at Wright-Patterson AFB.

For purposes of this study, the population was stratified into three levels. The upper level included active duty, full-time AFALD personnel assigned to the AFALD Command section and to the two-letter functional activity symbol (FAS)-coded Deputate sections of the AFALD. The intermediate level consisted of active duty, full-time AFALD personnel assigned at the Directorate (three letter FAS-coded AFALD organizations) level. The lower level consisted of

both Division and Branch (four and five letter FAS-coded AFALD organizations) levels. Figure 1 depicts the AFALD organizational hierarchy and the stratification scheme used for this research effort.

For purposes of this study, the three strata level population contained a total of ninety-six supervisory positions. The upper level strata population contained a total of fourteen supervisory positions. These fourteen represented approximately fifteen percent of all strata supervisors in this study (14/96). The intermediate (Directorate) population contained thirty-eight supervisory positions, which represented approximately forty percent of the study supervisory positions (38/96). The lower strata level population (Divisions and Branches) contained forty-four supervisory positions, which represented forty-six percent of the total number of supervisory positions identified for this study (44/96). Organizational stratification into upper, intermediate, and lower levels was done in order to maintain consistency with the other thesis effort being conducted by Captains Michael H. Krupthaupt and Jerry E. Roshto.

We also assumed, for purposes of this study, that the AFALD organizations located at Wright-Patterson AFB were representative of satellite AFALD organization populations not located at Wright-Patterson AFB. This assumption was confirmed by Major Robert L. Carter of AFALD/MO, Resources Control Office (4). Therefore, the results we

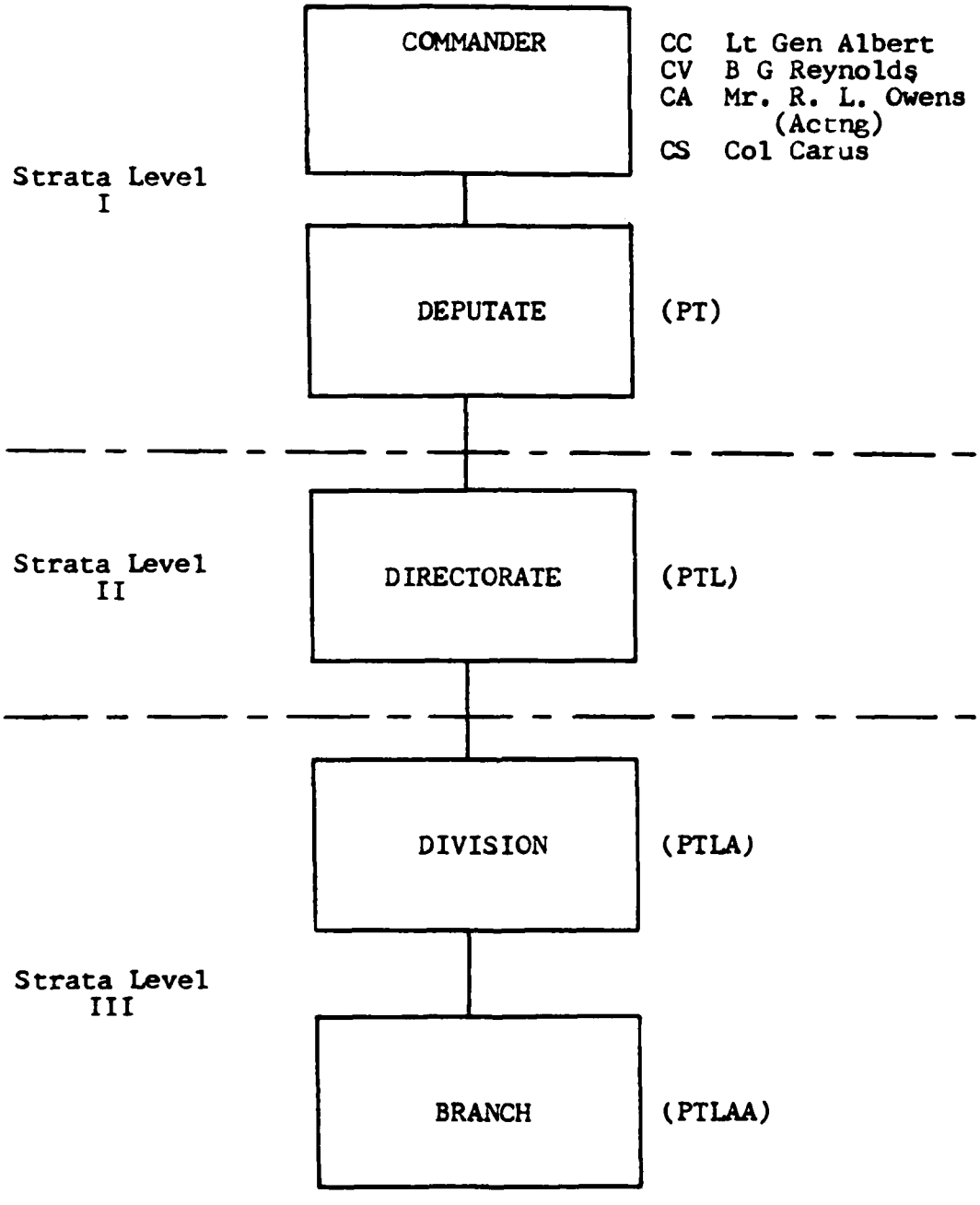


Fig. 1. AFALD Organizational Stratification

obtained from data collected concerning the AFALD population at Wright-Patterson AFB were considered to be a valid representation of all AFALD organizational characteristics.

Using information from the AFALD Unit Manpower Document (UMD), the AFALD Resources Control Office, and the AFALD Position Management File (PMF), we attempted to determine the degree to which the AFALD, as previously defined, was manned to its specified levels. We also attempted to identify overages and shortages, if any, by AFSC. We examined and compared the AFALD organization manning levels, as allocated by HQ AFLC, to actual organization manning levels obtained from data contained within the Unit Manpower Document (UMD) for the AFALD.

To determine the degree to which AFALD personnel were filling organizational billets that matched their specific skill codes, we examined UMD data to calculate the percentage of AFSC matches within the AFALD, as well as matches by AFSC. A match occurred whenever specific personnel skill codes matched skill codes specified for an organizational billet. We calculated the percentage of matches by dividing the total number of identified matches by the total number of organizational billets identified, this value being multiplied by one hundred. Matches were also aggregated by AFSC.

To determine the degree to which the skill codes of AFALD personnel were appropriate to perform the formal and

day-to-day AFALD organization tasks, the research team distributed questionnaires to the ninety-six supervisors identified in this study. Questionnaires contained self-explanatory instructions. Respondents were instructed in the questionnaire to return completed questionnaires to Mr. Jerry Harrison, XRX, where they were collected by the research team. Questionnaires took the form of that contained in Appendix B. Analysis of questionnaire Likert-type response sets allowed us to determine to what degree AFALD personnel skill codes were appropriate for meeting organization formal and informal mission responsibilities.

To determine the degree to which educational requirements, as coded by AAD billets, were filled by personnel whose personnel code had those AAD billet identifiers, we compared authorized AAD codes to personnel AAD codes filling specified AAD slots. This AAD information was extracted from the Unit Manpower Document (UMD) for the AFALD. This comparison allowed us to determine the percentage of AAD code match for all AFALD AAD-coded slots. This percentage was developed by determining the total number of AAD-coded slot matches, then dividing this number by the total number of the AFALD AAD-coded slots. Multiplying this number by one hundred gave us the percentage of AAD code match for all AFALD-coded slots.

To determine the degree to which the AFALD civilian-to-military personnel ratio matched USAF-established

guidelines, we compared these USAF documented guidelines with AFALD UMD information. A personnel ratio was computed from UMD data by first summing the total number of full-time civilian employees permanently assigned to the AFALD population under study. The same was done for military employees assigned to the AFALD population under study. A ratio was then computed by dividing the total number of military by the total number of civilians. The AFALD ratio was divided by the USAF-established ratio guideline to determine the degree to which the AFALD military-to-civilian personnel ratio matched the USAF guideline. In addition, the ninety-six supervisors previously mentioned were asked to what extent they considered this military-to-civilian personnel ratio appropriate for meeting organization mission responsibilities.

To determine to what degree actual personnel grades matched the AFALD grades specified for each job position, we used UMD data to compare organizational billet grade requirements authorized for each strata, with the actual grade of AFALD personnel filling the organizational billet. Mismatches of more than one grade higher or lower than the billet-specified grade were summed. This sum was then divided by the total number of organizational billets comprising the population under study. The resultant percentage was then subtracted from one hundred to determine the extent of personnel-to-organizational grade match.

Survey questionnaire responses were listed on a master data collection sheet, as seen in Appendix C. Each survey questionnaire was assigned a questionnaire number. Respondents noted their two, three, four or five letter FASs on the questionnaire. Functional activity symbols were assigned an organizational level code in accordance with the previously defined stratification scheme. Responses were, as previously mentioned, recorded on a master data collection sheet (Appendix C).

Data Analysis

In analyzing the data, we were concerned only with significant indicators of resource-to-mission mismatches. The reader should note that some degree of mismatch will occur in any organization. It is the degree of match and mismatch with which this research effort is concerned. The reader should not be misled by the existence of mismatches in the research findings.

To determine the degree to which the AFALD was manned to its specified levels, manning percentages were developed for each stratified level. These percentages were derived using UMD data and the following formula:

$$\text{Stratified Manning \% Level} = \frac{\text{Actual No. of Assigned AFALD Personnel (by level)}}{\text{Authorized No. of Personnel Slots (by level)}} \times 100$$

These stratified manning percentages represent the degree to which the AFALD strata levels were manned.

An AFALD aggregate percentage manning figure was also developed. This percentage was derived using UMD data and the following formula:

$$\text{AFALD Aggregate Manning Percentage} = \frac{\text{Total No. of Assigned AFALD Personnel}}{\text{Total No. of Authorized AFALD Slots}} \times 100$$

The AFALD aggregate manning percentage represents the level to which the AFALD organization was manned.

To determine the degree that the AFALD manning percentage matched the USAF manning percentage, the AFALD aggregate manning percentage was divided by the Air Force specified organizational manning percentage. This indicates the degree to which AFALD manning levels matched USAF specified manning levels.

The AFALD aggregate manning percentage was also divided by the percent manning level for Air Force intermediate level organizations to determine the degree of match between AFALD manning levels and other USAF intermediate level organization manning levels.

Data necessary to derive these percentage figures are presented in table format in the Findings chapter.

To determine to what degree AFALD personnel were filling organizational billets which matched their specific

skill codes, UMD data were used to compute the following percentage figures:

$$\text{\% of AFSC Match, per Individual AFSC} = \frac{\text{No. of Matches per AFSC}}{\text{No. of Slots Filled per AFSC}} \times 100$$

$$\text{\% of AFSC Match, per Stratified Level} = \frac{\text{No. of Matches, by Level}}{\text{Total No. of Filled Slots, by Level}} \times 100$$

$$\text{Aggregate \% of AFALD AFSC Match} = \frac{\text{Total No. of AFSC Matches}}{\text{Total No. of Filled Slots}} \times 100$$

To determine to what degree the skill codes of the AFALD billets were appropriate to perform the tasks necessary for AFALD organizations to meet their principle formal and informal mission responsibilities, we asked supervisor personnel to answer a series of survey questions. Questions were as contained in Appendix B.

After questionnaires were collected, we assigned values for answers along the Likert-type response set. We statistically manipulated these values to produce simple mean ($\bar{X}$) and standard deviation s(X) values, both for strata level and aggregate population responses.

Calculating a mean and standard deviation for each question allowed us to determine whether supervisors believed the skill codes of the AFALD billets were appropriate for performing tasks necessary for AFALD organizations to meet their primary formal and informal mission responsibilities.

The reader should be aware that we treated the ordinal data obtained from the Likert-scaled questionnaire responses as interval data for purposes of statistical analysis. With the Likert scale it can be reported that the respondents are more or less in agreement to a question, but it cannot be determined exactly how much more or less they are in agreement with the question. However, the means and standard deviations computed will usually have values between the ordinal data points.

We recognize that the fourteen supervisors in the top level represent a small sample size, but it should be recognized that this will be the case in the majority of evaluations where the number of supervisors at the top level will be small in relation to the size of the total organization. The risk of deleting the top level from the study and not discussing them is worse than any bias that might result by leaving them in the study. The reader should be aware, however, that the mean and standard deviation are based upon a sample size of fourteen for the top level supervisory strata, and a larger standard deviation of the sampling distribution can be expected (5:225).

To determine to what degree educational requirements, as coded by AAD billets, were filled by personnel whose personnel code had those AAD billet identifiers, we examined UMD data to compare the AAD codes of personnel filling specified AAD-coded slots. A comparison of all AFALD

AAD-coded slots to the AAD codes of the personnel filling them was done using UMD data to determine the percentage of AAD code match and mismatch for all AFALD AAD-coded slots. AAD code "match" and "mismatch" were previously defined. The aggregate percentage of AAD code match was computed as:

$$\text{Aggregate \% of AAD Code Match} = \frac{\text{(Total No. of AAD Slot Matches)}}{\text{Total No. of AFALD Authorized AAD Slots}}$$

In addition, a stratified level percentage of AAD code match was computed to examine the percent of AAD slot match by level.

To determine the relative importance of AAD code match, we asked supervisors, by survey questionnaire, the extent to which they believed AAD code mismatches within their organizations impacted the problem-solving, analysis, policy formulation, synthesis, and evaluation capabilities of their organization. Again, a mean response and standard deviation were computed. Research question four, then, determined the percentage of AAD code match for all AFALD AAD-coded slots.

To determine the extent to which the AFALD civilian-to-military personnel ratio matched USAF-established personnel guidelines, we computed an AFALD civilian-to-military personnel ratio:

$$\text{Aggregate AFALD Civilian-to-Military Personnel Ratio} = \frac{\text{Total No. of Assigned AFALD Civilian Personnel}}{\text{Total No. of Assigned AFALD Military Personnel}}$$

"Civilian" and "military" AFALD personnel were previously defined. Personnel totals were extracted from UMD data simply by summing first civilian and then military AFALD personnel. This ratio was additionally computed for each stratified level. The aggregate AFALD civilian-to-military personnel ratio was then compared to the USAF-established ratio guideline to determine the extent to which the AFALD ratio matched the established guideline.

Supervisors were also asked to what extent the civilian-to-military personnel ratio of the organization they supervise was appropriate for meeting organizational responsibilities. We computed a mean response and standard deviation for each strata level, and for the aggregate.

To determine the degree to which actual personnel grades matched the AFALD grades specified for each job position, we examined UMD data to find out whether AFALD personnel were filling organizational billets which required their specific grade. We compared all AFALD job billet grades to the grades of personnel filling the billets to compute the percentage of grade match in the AFALD. Grade "match" was previously defined. The aggregate AFALD grade match was computed as:

$$\text{Aggregate \% of AFALD Grade Match} = \frac{\text{Total No. of AFALD Grade Matches}}{\text{Total No. of AFALD Filled Billets}} \times 100$$

CHAPTER III

FINDINGS

This chapter contains the analysis and data summarization for research questions one through six, in conjunction with the methodology put forth in Chapter II.

Summary of Assumptions and Limitations

The major assumptions and limitations of this research effort were:

Assumptions

1. The responses to the Survey Questionnaire were representative of the opinions of the entire AFALD supervisory population.

2. The individual responses to the questionnaire were independent.

3. The Likert scale provided responses which were interval level data.

4. UMD data were representative of AFALD organizations not collocated at Wright-Patterson AFB.

Limitations

This research effort was based upon the personal opinions of AFALD organization supervisors and UMD data pertinent to Wright-Patterson AFB located AFALD organizations only.

Survey Approval and Data Collection

As previously stated, in order to answer the six research questions posed, information was collected from the Unit Manpower Document (UMD) and from survey questionnaire responses.

The survey questionnaire was submitted to Colonel G. A. Carus, AFALD Chief of Staff, prior to distribution to the AFALD population. Upon Chief of Staff approval, the questionnaire was mailed to AFALD supervisory personnel comprising the population. From date of mailing, one week was allowed for receipt of the questionnaires.

Ninety-six questionnaires were mailed. Seventy-two questionnaires were returned at the end of one week. Eleven of fourteen, or 71 percent of questionnaires mailed to the command section and deputies, were returned. Twenty-eight of thirty-eight, or 74 percent of questionnaires mailed to the directorate supervisors, were returned. Twenty-three of twenty-five, or 92 percent of questionnaires mailed to division supervisors, were returned; and nine of nineteen, or 47 percent of questionnaires mailed to branch supervisors, were returned. We concluded at this time that a seventy-four percent population response (72/96) to the questionnaire was adequate to answer those research questions dependent upon questionnaire responses. Two questionnaires were excluded from the study because they were answered by one ASD employee and one employee not in a supervisory position. Also, AFALD

organizations studied by this effort contained 753 personnel, 65.76 percent of the total AFALD personnel population.

Likert-type response sets of returned questionnaires were weighted according to the following scheme:

Weight	
(1)	to a very little extent
(2)	to a little extent
(3)	to some extent
(4)	to a great extent
(5)	to a very great extent

to compute a simple mean and standard deviation of response for each question. Means and standard deviations were computed both for aggregate population responses and for responses by level. Findings were addressed in relation to specific research questions.

Criteria Tests

The following criteria tests were used for the Likert scale measurement questions:

1. The conclusions to the analysis were based on the following ranges for the treatment means:

a. If the mean response fell within 1.0 and 1.5, then the conclusion drawn was that the respondent's answer was "to a very little extent."

b. If the mean response was greater than 1.5, and less than or equal to 2.5, then the conclusion drawn was that the respondent's answer was "to a little extent."

c. If the mean response was greater than 2.5 and less than 3.5, then the conclusion drawn was that the respondent's answer was "to some extent."

d. If the mean response fell within 3.5 and less than 4.5, then the conclusion drawn was that the respondent's answer was "to a great extent."

e. If the mean response fell within 4.5 and 5.0, then the conclusion drawn was that the respondent's answer was "to a very great extent."

Unit Manpower Document (UMD) information was collected through analysis of Unit Manpower Document computer printouts (10:1-94). UMD information was addressed in relation to specific research questions.

Statistical data (histograms) for demographic data responses are shown in Appendix D. The statistical data (mean and standard deviation) for each level response, as well as for the aggregate response to each survey question, are presented in table form in the analysis section for each related research question.

Research Question One

Is the AFALD manned to its specified levels? If the organization is found not to be manned to the levels specified, what are the major shortages or overages by AFSC?

To answer research question one, AFALD manning information, both in the aggregate and for upper,

intermediate and lower strata levels, was compiled from the Unit Manpower Document (UMD). This information is contained in Table 1.

The aggregate manning level percentage for those AFALD organizations studied was 86.75 percent. That is, eighty-seven percent of all authorized AFALD billets, across all strata levels studied, were filled.

When analyzing the data by level, the following results were obtained:

a. The upper strata was 89.47 percent filled.

b. The intermediate strata was 91.46 percent filled, the highest of all three levels.

c. The lower strata was 80.74 percent filled.

d. The overall FY 80 USAF manning was 101.24 percent.

It must be noted that the AFALD mission requires a larger number of highly technical personnel, when compared with the Air Force as a whole. The requirement to recruit and fill technical AFSCs will continue to be a recurrent problem, both for the AFALD and for other USAF organizations. However, relative to other complex organizations with skilled positions, the AFALD is not significantly under-manned.

To determine the degree to which the AFALD aggregate manning percentage matched the USAF aggregate manning percentage, we divided the AFALD aggregate manning

percentage by the USAF percentage, and found that the AFALD was 84.8 percent manned when compared to the overall USAF manning level.

Table 1

AFALD MANNING PERCENTAGE, BY STRATA LEVEL, AND AGGREGATE

Strata Level	Authorized Billets	Assigned Personnel	Manning Percentage
Upper	38	34	89.47
Intermediate	562	514	91.46
Lower	457	369	80.74
Aggregate	1,057	917	86.75
Overall USAF* (FY 80)	800,400	802,311	101.24

*(10)

Table 2 shows FY 80 assigned versus authorized manning percentages for selected USAF major commands (7) and intermediate level organizations (11). The mean manning percentage for the seven selected major commands was 102.58 percent. The mean manning percentage for selected USAF intermediate level organizations, excluding the AFALD, was 101.74 percent. It should be noted that the Department of the Air Force is authorized a two percent civilian overage above the total number of authorized civilian billets. The FY 80 civilian overage was one percent and, as a result, the Air Force was manned overall in FY 80 at 100.24 percent of its authorized level (10).

Table 2

FY 80 ASSIGNED TO AUTHORIZED MANNING PERCENTAGES FOR SELECTED USAF MAJOR COMMANDS AND INTERMEDIATE LEVEL ORGANIZATIONS

Major Command	Manning Percentage*
AFLC	104.10
AFSC	98.33
ATC	105.45
PACAF	100.29
SAC	99.43
TAC	112.20
USAFE	98.29
Mean Percentage	102.58

Intermediate Level Organizations	Manning Percentage**
ASD	102.17
OO-ALC	100.03
OC-ALC	101.18
SA-ALC	102.99
SM-ALC	101.49
WR-ALC	102.60
Mean Percentage	101.74
AFALD	86.75
Overall USAF*	101.24

*(7)

**(11)

Table 3 reflects AFALD personnel shortages by selected AFSCs. Other AFSCs contained insufficient authorized billet quantities for us to analyze and derive any meaningful conclusions concerning personnel shortages by AFSC.

For purposes of analysis, individual critical AFSCs were aggregated into AFSC classification groups. This resulted in seven AFSC classification groups, where the logistics AFSCs 66xx and 0046 were combined.

The aggregate manning percentage by AFSC classification group ranged from a low of 33.33 percent to a high of 100.00 percent. The mean aggregate manning percentage by AFSC classification group was 74.89 percent, with a standard deviation of 23.05 percent.

Research Question Two

To what degree are AFALD personnel filling organizational billets which match their specific skill codes?

To answer research question two, we attempted to extract the data from the UMD. However, during data collection it was discovered that there were no AFSC mismatches. This was possibly so because the AFALD Manpower Office has the ability to change the specified AFSC to a different billet to match the AFSC of billet holders. At any rate, mismatches do not cause a manning problem in the AFALD.

Table 3

PERSONNEL SHORTAGES BY AFSC

AFSC	Classification Group	Military Auth./Asgnd.		Percent Manned	Civilian Auth./Asgnd.		Percent Manned	Aggregate % Manned
26XX	Operations Analyst	9	8	88.89	13	12	92.31	90.91
27XX	Program Manager	28	24	85.71	5	2	40.00	78.79
28XX	Engineer	65	50	76.92	61	46	75.41	76.19
40XX	Maintenance	22	17	77.27	28	11	39.29	56.00
51XX	Computer	5	4	80.00	7	0	00.00	33.33
65XX	Procurement	8	8	100.00	32	32	100.00	100.00
66XX & 0046	Logistics	101	91	90.10	127	112	88.19	89.04

Mean Aggregate Manning Percentage by AFSC = 74.89%

Standard Deviation = 23.05%

Research Question Three

Are the skill codes of AFALD billets appropriate for performance of those tasks necessary for AFALD organizations to meet their primary formal and informal organization mission responsibilities?

This research question was answered utilizing information provided by survey questions two, three, four, five, and six. Research question four measured the extent to which supervisors felt personnel skill codes were appropriate for meeting organization day-to-day tasks. Research question three measured the extent to which supervisors felt personnel skill codes were appropriate for accomplishing organization formal mission responsibilities. Supervisor responses for survey questions three and four are contained in Table 4.

An aggregate mean value of 4.0902 for survey question three indicated that of the supervisory personnel surveyed, the majority (50%) felt that, to a great extent, the skill codes of personnel within their organizations were appropriate for meeting organization formal mission responsibilities. In fact, 81.4 percent of respondents felt that this was true to a great or very great extent. Analysis of survey question two data showed that 95.7 percent of all respondents were familiar with their organization's formal mission responsibilities (see Appendix C).

Supervisor responses to survey question four indicated that the majority of supervisors felt that, to a great extent, the skill codes of personnel were appropriate for meeting organization day-to-day tasks. The results indicated that 74.3 percent of respondents felt this to be true to a great or very great extent, while only 2.9 percent felt this to be true to a little or very little extent.

The individual strata level responses showed that the majority of supervisors at all levels felt that the skill codes of personnel they supervised were, to a great extent, appropriate for meeting organization day-to-day tasks.

Analysis of survey question five responses allowed us to determine the extent to which supervisors perceived the difference between their organization's formal mission responsibilities and actual day-to-day organizational tasks. These data were compiled in Table 5.

Analysis of responses to survey question five showed a mean response of 2.2714, which indicated that, of the supervisory personnel surveyed, the majority felt that there was little difference between formal mission responsibilities and actual day-to-day organizational tasks.

Individual strata level responses showed that at all levels supervisors perceived little difference between formal and actual day-to-day organizational tasks.

Table 4

SURVEY QUESTIONS 3 AND 4

Question 3: To what extent are the skill codes (AFSCs or General Schedule (GS) series) of personnel within the organization you supervise appropriate for accomplishing the tasks necessary for your organization to meet its principal formal mission responsibilities as you see them?

Strata Level	Mean	Standard Deviation	Interpretation
Upper	4.3636	.0545	to a great extent
Intermediate	4.036	0.9220	to a great extent
Lower	3.871	0.8850	to a great extent
Aggregate	4.0902	0.8927	to a great extent

Question 4: To what extent are the skill codes of personnel within the organization you supervise appropriate for accomplishing the tasks necessary for your organization to meet its actual day-to-day tasks?

Strata Level	Mean	Standard Deviation	Interpretation
Upper	4.3636	.0545	to a great extent
Intermediate	4.077	0.9348	to a great extent
Lower	3.8387	0.9344	to a great extent
Aggregate	4.0931	0.8960	to a great extent

Table 5

SURVEY QUESTION 5

To what extent do you perceive a difference between the formal mission responsibilities of the organization you supervise, and the actual day-to-day organization's tasks?

Strata Level	Mean	Standard Deviation	Interpretation
Upper	1.6364	.9244	to a little extent
Intermediate	2.2500	1.0408	to a little extent
Lower	2.3870	1.0856	to a little extent
Aggregate	2.0911	1.0169	to a little extent

Analysis of survey question six showed that 65.38 percent of the supervisors surveyed felt that formal organizational tasks were the most important. All upper level supervisors felt that formal organizational tasks were the most important, while 70.0 percent of intermediate level supervisors felt that they were most important. At the lower level, 57.14 percent of the supervisors felt that formal organizational tasks were the most important. These data were compiled in Table 6.

The second part of survey question six determined whether supervisors considered formal or day-to-day organizational tasks the most time consuming. In the aggregate, 55.6 percent of all supervisors felt that formal tasks consumed the most time. One hundred percent of upper level supervisors considered formal tasks as most time consuming. At the intermediate level, 55.0 percent of supervisors

considered formal organizational tasks the most time consuming, while at the lower level, 50.0 percent of supervisors felt that formal tasks consumed the most time.

Table 6

SURVEY QUESTION 6

If you perceive a difference between your organization's formal and day-to-day tasks,

a. which is the most important?

Strata Level	Percent Formal	Informal
Upper	100.00	00.00
Intermediate	70.00	30.00
Lower	57.14	42.86
Aggregate	65.38	34.62

*17 not answered

b. which consumes the most time?

Strata Level	Percent Formal	Informal
Upper	90.00	10.00
Intermediate	55.00	45.00
Lower	50.00	50.00
Aggregate	65.00	35.00

*17 not answered

Research Question Four

To what degree are the educational requirements, as coded by AAD billets, filled by personnel whose personnel codes have those AAD billet identifiers?

To answer research question four, UMD data and responses to survey question seven were used. Analysis of Unit Manpower Document data allowed us to compute the percent of AAD code match by level, and by AFSC.

The aggregate percentage of AAD code match for those AFALD organizations studied was 77.78 percent, as shown in Table 7. This indicated that 77.78 percent of the total number of AFALD AAD-coded billets were filled by personnel who possessed the specific AAD code or equivalent experience required for the billet.

We had initially identified nine AAD code mismatches, but upon further analysis concluded that three individuals filling AAD-coded billets possessed appropriate related prior experience which we considered equivalent to the required AAD. Of these three, two did not have any advanced academic degree, while one had an AAD unrelated to his AAD-coded billet.

Analyzing the data by level, the upper level displayed only one AAD-coded billet, which was vacant. The intermediate level, which contained the largest number of AAD-coded billets, had an 88.9 percent AAD code match, while the lower level had a 55.6 percent match.

Table 7

AAD CODE MATCH PERCENTAGE BY STRATA LEVEL

Strata Level	Total No. of AAD Coded Billets (1)	Vacant AAD Billets (2)	Matched AAD Billets or Equivalent Experience (3)	Percent Match (3)/(1)-(3)
Upper	1	1	0	00.00
Intermediate	19	1	16	88.89
Lower	11	2	5	55.56
Aggregate	31			77.78

UMD data were also utilized to determine the aggregate percentage of AAD code match by AFSC classification group. Analysis of the data showed that 66.7 percent of specified advanced academic degree billets were both filled and matched. UMD data indicated that there were no significant mismatches among the AAD-coded AFSC billets. The total number of any one AAD-coded AFSC was so small, that to base any conclusions upon these numbers would be inaccurate. Findings were compiled in Table 8.

Analysis of responses to survey question seven allowed us to determine the extent to which supervisors believed AAD-coded billet mismatches within their organization impacted problem solving, analysis, policy formulation, synthesis, and evaluation capabilities of the organization. Supervisor responses are contained in Table 9. Fourteen survey questionnaire responses for survey question

Table 8

PERCENTAGE OF AAD-CODED BILLET MATCH BY AFSC

AFSC	Classification	Total AAD Coded Billets	Vacant AAD Billets	Matched AAD Billets	Percent Match
26XX	Operations Analyst	3	0	1	33.33
27XX	Program Manager	2	0	1	50.00
28XX	Engineer	6	1	4	80.00
40XX	Maintenance	2	0	2	100.00
51XX	Computer	2	1	1	100.00
65XX	Procurement	1	1	0	N/A
66XX & 0046	Logistics	13	1	10	91.67

seven were unanswered, marked "don't know" or "not applicable." These fourteen responses were not included in mean and standard deviation calculations.

Table 9

SURVEY QUESTION 7

To what extent do you believe advanced academic degree (AAD) coded slot mismatches within your organization, if any, impact the problem solving, analysis, policy formulation, synthesis, and evaluation capabilities of your organization?

Strata Level	Mean	Standard Deviation	Interpretation
Upper	1.300	0.6750	to a very little extent
Intermediate	1.625	0.8242	to a little extent
Lower	2.320	1.2490	to a little extent
Aggregate	1.8393	1.0579	to a little extent

Analysis of question seven responses gave a mean aggregate value of 1.8393, which indicated that, of the supervisory personnel surveyed, the majority felt that AAD-coded billet mismatches within their organizations impacted to a very little extent, the problem solving, analysis, policy formulation, synthesis, and evaluation capabilities of their organization. In fact, 67.9 percent of all supervisors surveyed felt that this was true to a little or very little extent.

The individual strata level responses showed that the intermediate and lower level supervisors felt that AAD code mismatches impacted organizational mission capabilities

to a little extent, while the upper level supervisors felt that it impacted to a very little extent. Only 5.4 percent of all respondents surveyed strongly felt that AAD code mismatches impacted organization effectiveness.

Research Question Five

To what extent is the AFALD civilian-to-military personnel ratio in accordance with USAF-established guidelines?

To answer research question five, UMD data and responses to survey question eight were analyzed. Analysis of UMD data allowed us to compute an aggregate civilian-to-military personnel ratio for the AFALD. These data were compiled in Table 10.

The aggregate civilian-to-military personnel ratio for those AFALD organizations studied was 2.81 to 1, i.e., there were 2.81 civilians for every military person in those AFALD organizations studied. In other words, 73.78 percent of AFALD personnel were civilians.

An analysis by level showed that in the upper level, a 1.71 to 1 ratio meant that 63.2 percent of upper level AFALD personnel were civilian. For the intermediate level, a 2.01 to 1 ratio indicated that 66.8 percent of intermediate level AFALD personnel were civilian. The lower level civilian-to-military personnel ratio of 5.60 to 1 indicated that 84.9 percent of lower level AFALD personnel were civilian.

Table 10

AGGREGATE AFALD ASSIGNED CIVILIAN-TO-MILITARY PERSONNEL RATIO

Strata Level	Total Civilian Personnel	Total Military Personnel	Civilian/ Military Ratio	Percent Civilians
Upper	24	14	1.71:1	63.16
Intermediate	346	172	2.01:1	66.80
Lower	308	55	5.60:1	84.85
Aggregate	678	241	2.81:1	73.78

The aggregate AFALD civilian-to-military personnel ratio was then compared to the USAF-established ratio guideline to determine the extent to which the AFALD aggregate ratio matched the established guideline (i.e., FY 80 USAF personnel authorizations). The Air Force FY 80 authorized civilian-to-military billet ratio was .43 to 1, i.e., 30.16 percent of all USAF personnel, authorized for fiscal year 1980, were civilian (7), compared with 73.44 percent for the AFALD.

The actual Air Force FY 80 civilian-to-military personnel ratio was .44 to 1, i.e., 30.45 percent of all actual USAF personnel during fiscal year 1980 were civilian, compared with 73.78 percent for the AFALD. Findings were contained in Table 11.

Table 11 showed FY 80 civilian-to-military manning percentages for selected USAF major commands and intermediate level organizations. Table 11 data also showed the percent

deviations between the assigned civilian-to-military manning percentage and the authorized civilian-to-military manning percentage.

Within the selected major commands, the authorized civilian-to-military manning percentage varied from 10.26 to 88.87 percent (7). Within selected intermediate level organizations, this manning percentage varied from 87.14 to 92.19 percent (11). The overall USAF authorized civilian-to-military manning percentage was 30.16 percent (7).

Analysis of responses to survey question eight allowed us to determine the extent to which supervisors considered the civilian-to-military personnel ratio of their organizations appropriate for meeting their mission responsibilities. Supervisor responses were compiled in Table 12. Five survey questionnaire responses for survey question seven were not answered. These five were not included in mean and standard deviation calculations.

Analysis of question eight responses gave a mean aggregate response value of 3.3485, which indicated that, of the supervisors surveyed, the majority felt that the civilian-to-military personnel ratio of their organization, to some extent, was appropriate for meeting organization mission responsibilities. However, it should be noted that 35.7 percent of supervisors felt to a great extent that the civilian-to-military personnel ratio of their organization was appropriate.

Table 11

FY 80 CIVILIAN-TO-MILITARY PERCENTAGES FOR SELECTED USAF MAJOR COMMANDS AND INTERMEDIATE LEVEL ORGANIZATIONS

Major Command	Authorized Civilian/* Military Percentage	Assigned Civilian/ Military Percentage	Percent Deviation
AFLC	88.87	89.09	+0.22
AFSC	51.10	50.07	-1.03
ATC	18.27	15.65	-2.62
PACAF	29.84	28.21	-1.63
SAC	10.81	11.64	+0.83
TAC	10.26	11.03	+0.77
USAFE	14.33	15.49	+1.16
Overall AF**	30.16	30.45	+0.29

Intermediate Level Organizations	Authorized Civilian/* Military Percentage	Assigned Civilian/ Military Percentage	Percent Deviation
ASD	70.12	72.22	+2.10
OO-ALC	87.14	87.63	+0.49
OC-ALC	91.98	92.32	+0.34
SM-ALC	90.69	90.79	+0.10
SA-ALC	91.98	92.06	+0.08
WR-ALC	92.19	92.21	+0.02
AFALD	73.44	73.78	+0.34

*(7) Mean: 87.87 Standard Deviation: 7.8702

**(11)

Table 12

SURVEY QUESTION 8

To what extent do you consider that the civilian-to-military personnel ratio of the organization you supervise is appropriate for meeting your organization's mission responsibilities?

Strata Level	Mean	Standard Deviation	Interpretation
Upper	3.3636	1.4334	to some extent
Intermediate	3.556	1.1547	to a great extent
Lower	3.220	1.3107	to some extent
Aggregate	3.3485	1.2829	to some extent

Individual strata level responses showed that both upper and lower level supervisors felt that the civilian-to-military personnel ratio within their organizations was appropriate to some extent, while intermediate level respondents felt that this was true to a great extent. It should also be noted that for all levels, the greatest percentage of supervisors responded "to a great extent."

Research Question Six

To what degree do actual personnel grades match the AFALD grades specified for each job position?

To answer research question six, UMD data were analyzed to compute the AFALD percent of grade match, by level, and for the aggregate. These data were compiled in Table 13.

Analysis of the UMD data showed that the aggregate percentage of AFALD grade match for those AFALD

organizations studied was 96.62 percent. This meant that 96.62 percent of the total number of authorized billet grade requirements were filled by personnel who possessed the specific grade required for the billet.

Analyzing the data by level, at the upper level there was a 94.12 percent grade match. At the intermediate level there was a 96.69 percent grade match, while at the lower level there was a 96.75 percent grade match.

Table 13

AGGREGATE PERCENTAGE OF AFALD GRADE MATCH

Strata Level	Total AFALD Billets (1)	Total Grade Mismatches (2)	Percent Grade Match (2) ÷ (1)
Upper	34	2	94.12
Intermediate	514	17	96.69
Lower	369	12	96.75
Aggregate	917	31	96.62

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

The primary objectives of this research effort were to investigate AFALD personnel requirements in terms of education, skill areas, specialty codes (AFSCs), General Schedule (GS) skill codes, and number. An attempt was also made to determine if these AFALD personnel requirements were correctly allocated throughout the AFALD organization to realize mission goals in the most effective and efficient manner. From this, an attempt was made to determine whether the major policy goals and organizational functional statements of the AFALD were consistent with the types and numbers of people in the AFALD organizations that were charged with the general AFALD mission.

Using the methodology of Chapter II, and the analysis and results from Chapter III, conclusions have been drawn for each of the research questions. These research question conclusions provided the foundation from which conclusions were determined for the primary objectives of this research.

Research Question Conclusions

The conclusions presented for the primary objectives were drawn from the following research questions.

Research Question One

Is the AFALD manned to its specified levels? If the organization is found not to be manned to the levels specified, what are the major shortages or overages by AFSC?

Analysis of data showed that AFALD is not manned to its specified (authorized) level. When we compared the AFALD manning level to other intermediate level organizations, the AFALD was manned approximately fifteen percent below these other intermediate organizations. The AFALD manning level, compared with selected USAF major commands, was also approximately fifteen percent below the major commands and the overall USAF manning percentage.

Examination of personnel shortages by AFSC indicated that the majority of personnel shortages occur in highly technical AFSCs. These highly technical AFSCs are especially difficult to fill, due to overall shortages Air Force and DOD wide. This was verified in conversations with Mr. W. Baldwin, Chief, Resources Control Office, AFALD/MO (1), and Major R. L. Carter, Resources Control Office, AFALD/MO (4). We conclude that the AFALD manning shortages primarily resulted from the inability to recruit and fill technical AFSCs. We could not determine the extent to which personnel shortages impacted the accomplishment of AFALD mission tasks, beyond assuming increased workload for AFALD personnel with designated technical AFSCs. As one lower level supervisor responded, "With the shortage of qualified people,

any 'warm' body appears adequate to fill positions. Training or background does not seem to be a factor."

We identified four AFSC classification groups with a particularly high number of shortages. These were Program Manager (72XX), Engineer (28XX), Maintenance Officer (40XX) and Computer (51XX).

Research Question Two

To what degree are AFALD personnel filling organizational billets which match their specific skill codes?

Since it was discovered, as previously mentioned, that AFALD Manpower Office has the ability to change specified billet AFSCs to match on-hand personnel AFSCs and since there was a one hundred percent match in our investigation, no conclusion was reached regarding the degree of match between specified versus assigned AFSCs.

Research Question Three

Are the skill codes of AFALD billets appropriate for performance of those tasks necessary for AFALD supervisors to meet their primary formal and informal organization mission responsibilities?

Results indicate that to a great extent the skill codes of personnel within the AFALD organizations are appropriate for meeting both the formal and informal organization responsibilities. Furthermore, data analysis indicates that there is little perceived difference between formal mission

responsibility and actual day-to-day organization tasks, while survey question six analysis indicates that formal organization tasks are the most important. We conclude that both formal and informal organization tasks are equally important to accomplishment of AFALD mission responsibilities.

Research Question Four

To what degree are the educational requirements, as coded by AAD billets, filled by personnel whose personnel codes have those AAD billet identifiers?

Results indicate that:

a. Overall, AFALD education requirements as coded by AAD billets are filled to a high degree by personnel whose personnel codes have these AAD billet identifiers. This is true when comparing AAD match either in the aggregate or by AFSC.

b. AAD code mismatches have little perceived impact on the problem solving, analysis, policy formulation, synthesis, and evaluation capabilities of AFALD organizations.

We also conclude that AAD match becomes less important at the upper strata levels of the organization, i.e., AAD match at the lower level becomes more important where technical skills are most often required. Intermediate and upper level strata positions require less technical but

more managerial skills in order to formulate policy and make organization decisions.

Research Question Five

To what extent is the AFALD civilian-to-military personnel ratio in accordance with USAF-established guidelines?

Results indicate that the AFALD civilian-to-military personnel ratio is:

a. In accordance with established Air Force guidelines for the AFALD.

b. Higher than the overall USAF civilian-to-military personnel ratio, lower than intermediate USAF organizations studied, but closer to the intermediate level organization civilian-to-military personnel ratio figures.

Results also show that the USAF-established civilian-to-military personnel may not be appropriate for AFALD mission accomplishment. Both questionnaire responses and comments from all strata levels indicate a preference for a greater percentage of military personnel. For example, the following comments were made:

> "My current military-to-civilian ratio is 40%. With the proper experience base for the military, this is healthy in most respects. Replacing and training military engineers is a problem and vacant periods for a position hurts mission accomplishment."
>
> "Would profit greatly from a much higher % of military with user background."
>
> "Not enough military."

"Civilian-to-military ratio should be decreased--we need more military to provide a better interface with operating commands."

In conclusion, it appears that although the AFALD civilian-to-military personnel ratio is within established guidelines, and is appropriate for meeting the AFALD mission, there exists a need for a greater percentage of military personnel within the organization.

Research Question Six

To what degree do actual personnel grades match the AFALD grades specified for each job position?

Results indicate that actual personnel grades match AFALD grades specified for each job position to a great degree. We therefore conclude that any grade mismatches within the AFALD are not significantly affecting AFALD mission performance.

Summary of Conclusions

A summary of the conclusions of this research effort follows:

1. The AFALD is manned somewhat below its authorized level.

2. The majority of AFALD personnel shortages occur in highly technical AFSCs.

3. The skill codes of personnel within the AFALD organizations are appropriate for meeting organization responsibilities.

4. There is a high degree of match between AAD-coded billets and AAD-designated personnel.

5. AAD code mismatches have little impact on the problem solving, analysis, policy formulation, synthesis, and evaluation capability of AFALD organizations.

7. The AFALD civilian-to-military personnel ratio is within established Air Force guidelines.

8. The current AFALD civilian-to-military personnel ratio may not be appropriate for maximizing AFALD performance.

9. Actual personnel grades match AFALD grades specified for each job position to a great degree.

10. Grade mismatches within the AFALD do not significantly affect AFALD mission performance.

11. AFALD personnel requirements were correctly allocated throughout the AFALD organization in order to realize mission goals in the most effective and efficient manner.

Overall Conclusion

While the AFALD suffers from the Air Force-wide shortage of technical specialists, the overall picture of manpower shows an organization well suited to its mission. Use of the AFALD as a representative intermediate level organization for the study of an advanced academic degree (AAD) percentage based system is feasible. Caution should

be taken that sampling of attitudes in any particular branch could be affected by a severe imbalance of skilled people to slots coupled with extraordinary short term work demands. In general, the shortages of people tended to be spread relatively evenly throughout any given strata, which should minimize this possibility. The very facts of the mix of AFSCs, the complexity of the mission, and the shortage of technical specialists make the AFALD a good test of any proposed percentage-based system. Such complex organizations exist elsewhere in the Air Force and must be counted, along with the simple ones, if the system is to be universal.

Recommendations

A recommendation concerning the relationship of aspects of manpower to AFALD mission performance is:

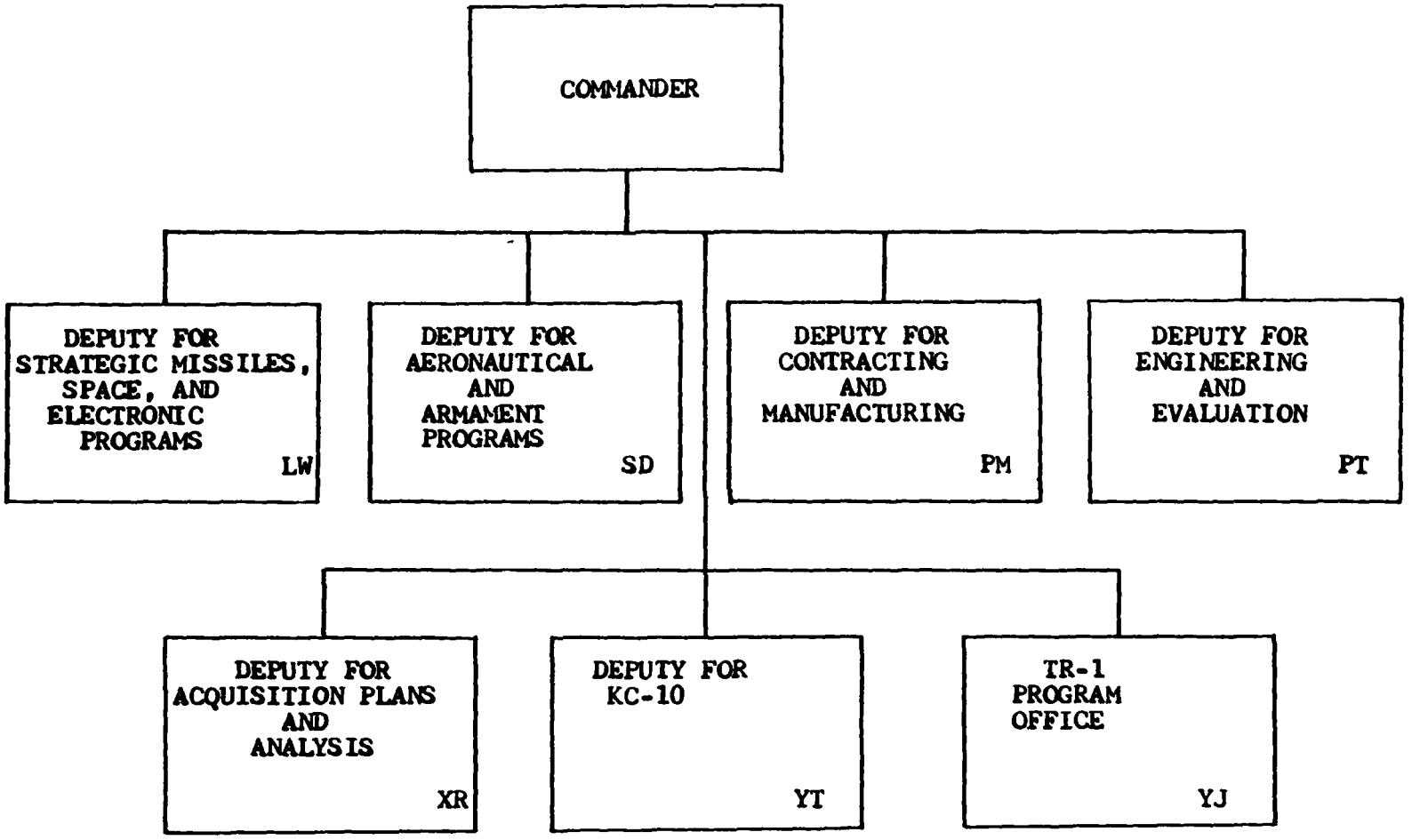
1. That consideration be given to reexamination of the current AFALD civilian-to-military personnel ratio, in order to determine if a higher percentage of experienced military personnel might be appropriate for enhancing the AFALD mission tasks.

2. Use of the AFALD is recommended as a subject for study of an advanced academic degree percentage-based system.

APPENDICES

APPENDIX A

AFALD ORGANIZATION, MANNING AND DIRECTORY CHART


COMMANDER
DEPUTY FOR STRATEGIC MISSILES, SPACE, AND ELECTRONIC PROGRAMS
LW
DEPUTY FOR AERONAUTICAL AND ARMAMENT PROGRAMS
SD
DEPUTY FOR CONTRACTING AND MANUFACTURING
PM
DEPUTY FOR ENGINEERING AND EVALUATION
PT
DEPUTY FOR ACQUISITION PLANS AND ANALYSIS
XR
DEPUTY FOR KC-10
YT
TR-1 PROGRAM OFFICE
YJ

APPENDIX B

SAMPLE QUESTIONNAIRE

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE ACQUISITION LOGISTICS DIVISION (AFLC)
WRIGHT-PATTERSON AIR FORCE BASE, OHIO 45433

REPLY TO ATTN OF: CS

30 APR 1981

SUBJECT: AFIT STUDENT RESEARCH: Percentage-based System for Assigning Advanced Academic Degree Holders

TO: See Distribution

1. HQ USAF/LEX is considering a new percentage-based system for determining Advanced Academic Degree (AAD) requirements within the Air Force.

2. The attached questionnaire is a part of a research effort currently being conducted by a thesis team from the AFIT Graduate Logistics Program. This thesis is one part of a two thesis effort to identify the means by which to best implement a percentage-based system. The Acquisition Logistics Division has been selected as the organization for testing the conceptual validity of a percentage-based system.

3. It is important that you answer each question as thoughtfully and as frankly as possible. All individual responses to questions are completely confidential, and individual information will not be released. This is an opportunity to help implement a more efficient system for the assignment of AAD holders throughout the Air Force as well as the AFALD.

4. Please return your completed questionnaire to Jerry Harrison, XRX, 56121, by COB 6 May 1981.

1 Atch
Questionnaire

GLENN A. CARUS
Colonel, USAF
Chief of Staff

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XRIG	Maj C. Wolf
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XRP	Maj Frank Petrie
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PTDP	Mr. Don Rolf
PTDPD	Ms. Mary Siegel
PTDPR	Mr. Fred Heaston
PTDD	Mr. Ermin Lilley
PTDDR	Mr. Leonard Long
PTDOS	Ms. Carolyn Brown
PTEE	Vacant
PTEEE	Lt Col D. Strickland
PTEEC	Maj Frank Douglas
PTEEL	Mr. Gary Waggoner
PTES	Mr. Arant Hugh
PTESS	Mr. Melvin McKenzie
PTESP	Mr. Frank Dorfmeyer
PTEST	Mr. Fred Thirtyacre
PTP	Mr. J.E. Thompson
PTPD	Mr. Ralph Zynda
PTPP	Vacant
PTPT	Matthew Venetos
PTQ	Lt Col Charles Hurst
PTQA	Ms. Ramona Fulford
PTQAA	Mr. Mario Ramirey
PTQAW	Mr. James Harris
PTQP	Lt Col David George
PTQPJ	Mr. Paul Mount
PTQPQ	Capt Peter Lnglis
PTQT	Maj John Dunigan
PTQTS	Mr. William Galbraith
PTQTA	Vacant
PTQTT	Vacant
SD	Col Germscheid
SD	Mr. R.L. Owen
SDM	Vacant
SDL	Col Neff
SDF	Col P. Voland
SDF	Mr. Louis Scira
SDA	Col R. Gillis
SDE	Col Dabrowski
SDE	Lt Col R.D. Byrne
SDE	Mr. Walter Elbinger
SDD	Lt Col J.D. Parr
SDS	Mr. R. Brown
SDP	Lt Col Romer
SDP	Mr. Ray Brinkman
SDP	Mr. Ben Williams
SDP	Mr. Gerald Yanker
SDP	Mr. Ronald Mutzeller
SDR	Col Schwargenback
SDR	Ms. Kimble Pendley
SDT	Col J. Schina
SDT	Maj Saliato
SDT	Mr. James Dulbert
LW	Brig Gen R.C. Karns
LWI	Capt Geiss

QUESTIONNAIRE

This questionnaire is a part of a thesis effort being conducted by two Masters of Science degree candidates at the Air Force Institute of Technology. In the broadest sense, this research effort serves as a basis for determining percentage-based advanced academic degree (AAD) personnel requirements within the large and diverse Air Force Acquisition Logistics Division (AFALD). This thesis is one part of a two-part effort to identify the means by which to best implement a percentage-based system for determining graduate education personnel requirements within the United States Air Force.

If this study is to be helpful, it is important that you answer each question as thoughtfully and frankly as possible. There are no right or wrong answers. The important thing is that you answer the questions the way you perceive things or the way you feel about them.

All individual responses to questions are completely CONFIDENTIAL. Although none of the questionnaires, once they are filled out, will ever be seen by anyone in AFALD, to ensure confidentiality, please do not place your name on the questionnaire unless you wish to do so.

Thank you for your assistance and cooperation.

1. What is the level of the organization you supervise? Please check the appropriate level.

_____Deputy or Command Section (AFALD/XX)
_____Directorate (AFALD/XXX)
_____Division (AFALD/XXXX)
_____Branch (AFALD/XXXXX)

To answer the following questions, please check the response which you feel best matches your appraisal of the question. The value of the study depends upon your being straightforward in answering this questionnaire. You will not be identified with your answers.

2. Are you familiar with the mission statement of the organization you supervise, as specified in AFLCR 23-17?

_____Yes _____No

3. To what extent are the skill codes (AFSCs or General Schedule (GS) series) of personnel within the organization you supervise appropriate for accomplishing the tasks necessary for your organization to meet its principal formal mission responsibilities as you see them?

_____to a very little extent
_____to a little extent
_____to some extent
_____to a great extent
_____to a very great extent

Comments:

4. To what extent are the skill codes of personnel within the organization you supervise appropriate for accomplishing the tasks necessary for your organization to meet its actual day-to-day tasks?

_____to a very little extent
_____to a little extent
_____to some extent
_____to a great extent
_____to a very great extent

Comments:

5. To what extent do you perceive a difference between the formal mission responsibilities of the organization you supervise, and the actual day-to-day organization's tasks?

_____to a very little extent
_____to a little extent
_____to some extent
_____to a great extent
_____to a very great extent

Comments:

6. If you perceive a difference between your organization's formal and day-to-day tasks, which is the most important?

_____formal tasks
_____informal tasks

Which consumes the most time?

_____formal tasks
_____informal tasks

Comments:

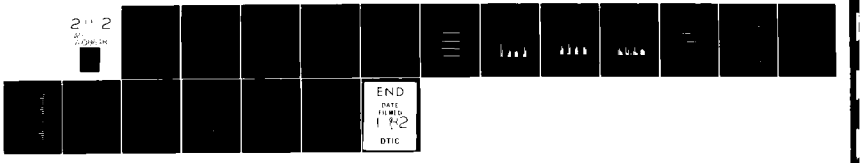
7. To what extent do you believe advanced academic degree (AAD) coded slot mismatches within your organization, if any, impact the problem solving, analysis, policy formulation, synthesis, and evaluation capabilities of your organization? A "mismatch" is defined as a difference between the specified AAD slot code and the AAD code carried by personnel assigned to fill the slot, or the situation wherein personnel filling an AAD coded slot did not have an AAD.

_____to a very little extent
_____to a little extent
_____to some extent
_____to a great extent
_____to a very great extent
_____do not know

Comments:

AD-A108 648 AIR FORCE INST OF TECH WRIGHT-PATTERSON AFB OH SCHOOL--ETC F/G 15/5
THE AIR FORCE ACQUISITION LOGISTICS DIVISION (AFALD): RELATIONS--ETC(U)
JUN 81 T S GREGG, J T RONAGHAN

UNCLASSIFIED AFIT/LSSR-44-81 NL



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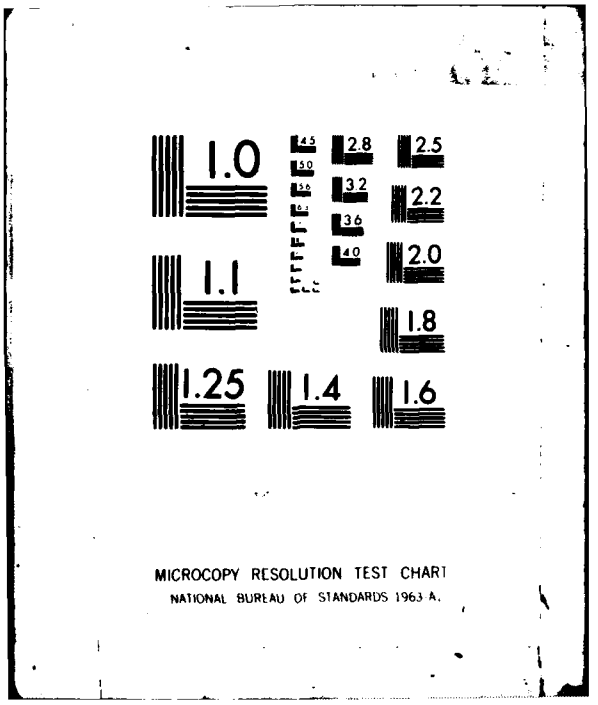
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1.1
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4.0
4.5
5.0
MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS 1963 A.

8. To what extent do you consider that the civilian-to-military personnel ratio of the organization you supervise is appropriate for meeting your organization's mission responsibilities?

_____to a very little extent
_____to a little extent
_____to some extent
_____to a great extent
_____to a very great extent

Comments:

APPENDIX C

RECORDED SURVEY QUESTIONNAIRE RESPONSES

QUESTIONNAIRE RESPONSES

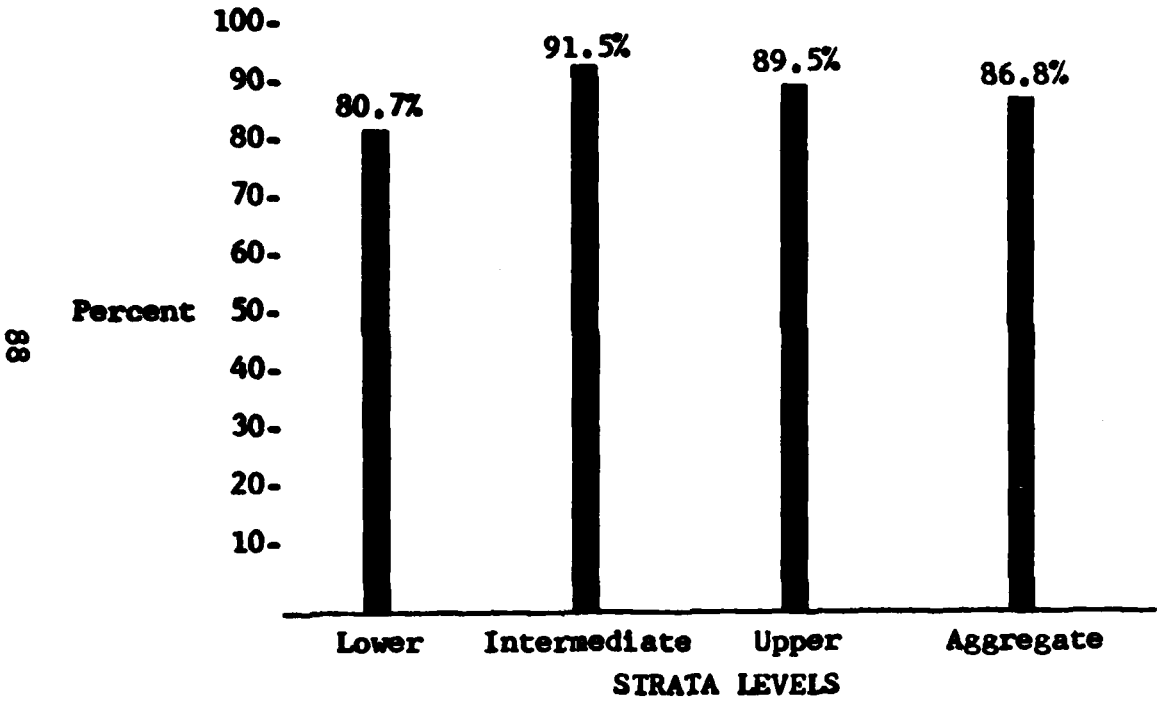
Question Number	Code	Level			
		Command Section & Deputate	Directorate	Division	Branch
1	1	11			
	2		28		
	3			22	9
	4				
2	Yes	11	28	19	9
	No			3	
3	1	0	1	0	1
	2	0	0	0	0
	3	0	3	3	5
	4	7	13	12	3
	5	4	11	7	0
	Not Ans	0	0	0	0
	Comments	1	5	0	0
4	1	0	1	0	1
	2	0	0	0	0
	3	0	5	4	6
	4	7	13	10	2
	5	4	9	8	0
	Not Ans	0	0	0	0
	Comments	1	1	0	0
5	1	6	6	7	1
	2	1	14	8	1
	3	3	4	4	4
	4	0	4	3	3
	5	1	0	0	0
	Not Ans	0	0	1	0
	Comments	0	1	0	0
6(a)	Formal	10	16	9	1
	Informal	0	6	4	8
	Not Ans	1	6		
(b)	Formal	10	12	7	2
	Informal	1	10	7	7
	Not Ans	0	6		
	Comments	0	0	2	0

Question Number	Code	Level			
		Command Section & Deputate	Directorate	Division	Branch
7	1	8	14	7	3
	2	1	4	1	0
	3	1	4	7	3
	4	0	0	1	1
	5	0	0	1	0
	Not Known	1	3	2	1
	Not Ans		3	4	1
	Comments	1	8	0	0
8	1	2	1	3	2
	2	1	5	1	1
	3	1	5	4	1
	4	5	10	7	3
	5	2	6	5	0
	Not Ans	0	1	2	2
	Comments	4	3	0	0

APPENDIX D

HISTOGRAMS OF LIKERT SCALE SURVEY QUESTION RESPONSES AND DEMOGRAPHIC DATA

AFALD MANNING PERCENTAGE
ASSIGNED VS. AUTHORIZED MANNING LEVELS

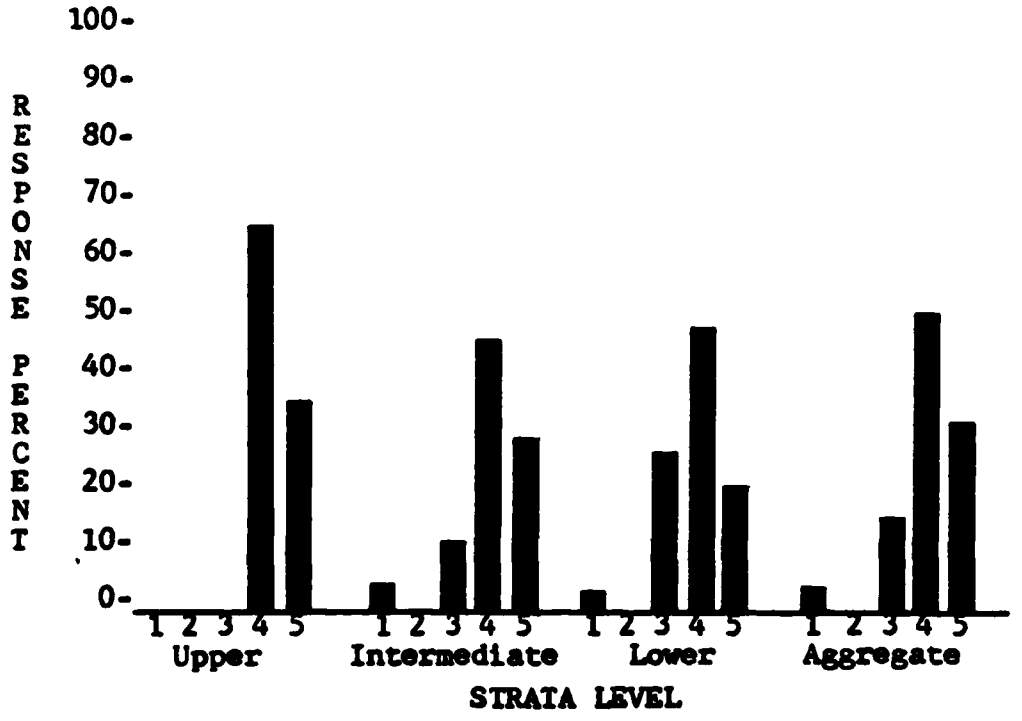


SURVEY QUESTION 3

To what extent are the skill codes (AFSCs or General Schedule (GS) series) of personnel within the organization you supervise appropriate for accomplishing the tasks necessary for your organization to meet its principal formal mission responsibilities as you see them?

(1) To a very little extent
(2) To a little extent
(3) To some extent
(4) To a great extent
(5) To a very great extent

	STATISTICS		
Strata Level	Mean	Mode	Standard Deviation
UPPER	4.3636	4	0.5045
INTERMEDIATE	4.0367	4	0.9220
LOWER	3.8710	4	0.8848
AGGREGATE	4.0714	4	0.8567



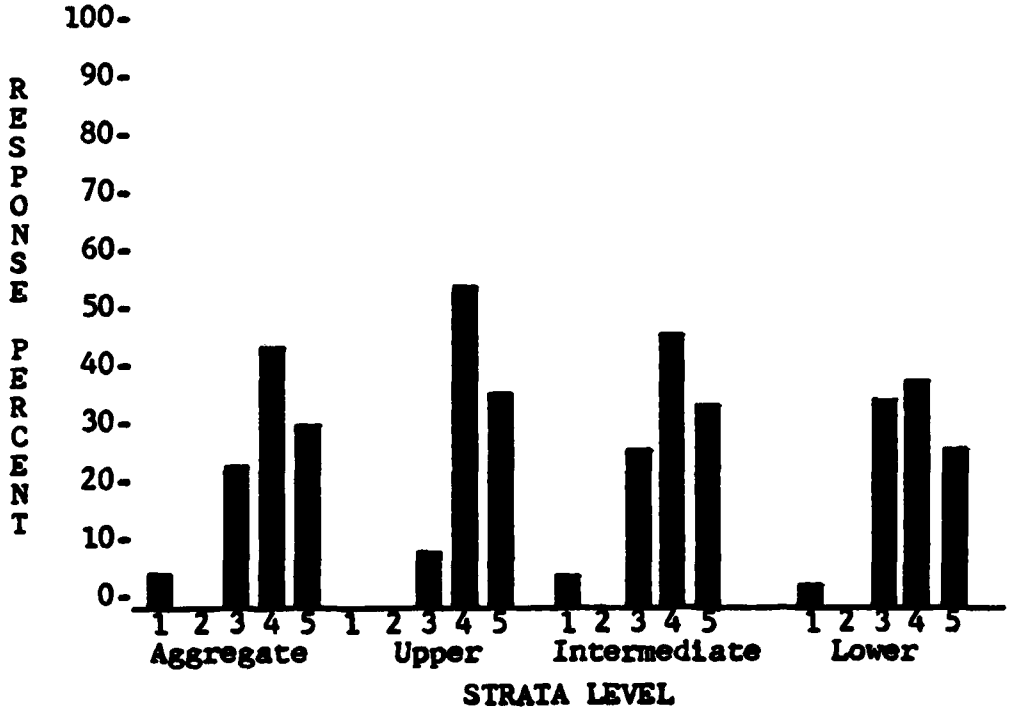
SURVEY QUESTION 4

To what extent are the skill codes of personnel within the organization you supervise appropriate for accomplishing the tasks necessary for your organization to meet its actual day-to-day tasks?

(1) To a very little extent
(2) To a little extent
(3) To some extent
(4) To a great extent
(5) To a very great extent

STATISTICS

Strata Level	Mean	Mode	Standard Deviation
UPPER	4.3636	4	0.5045
INTERMEDIATE	4.0773	4	0.9348
LOWER	3.8387	4	0.9344
AGGREGATE	4.0149	4	0.8960

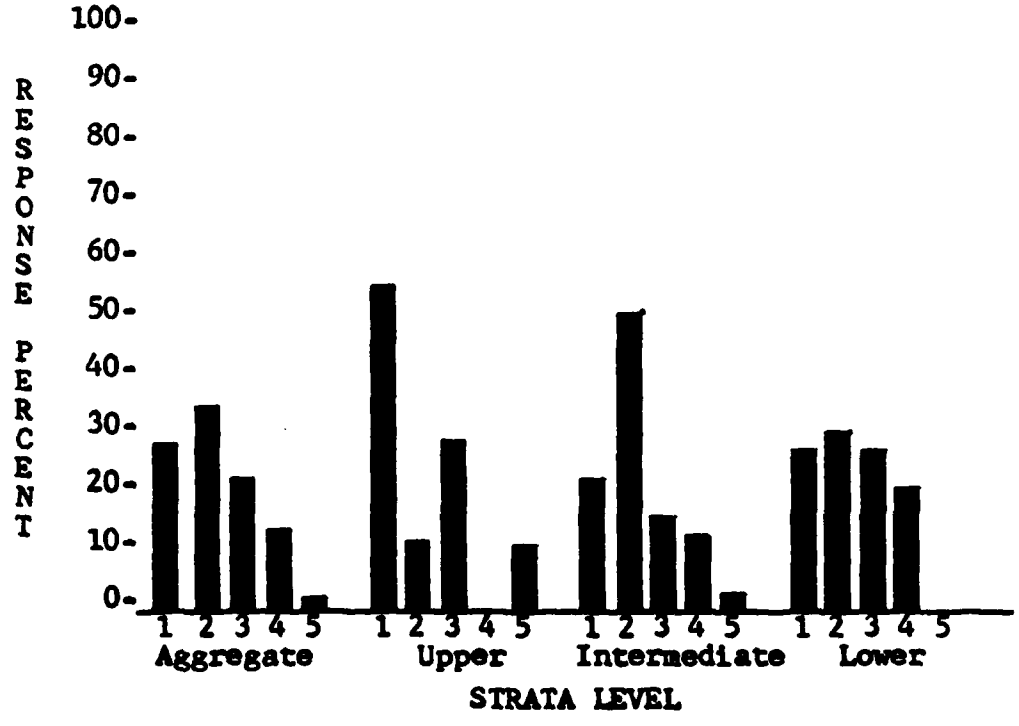


SURVEY QUESTION 5

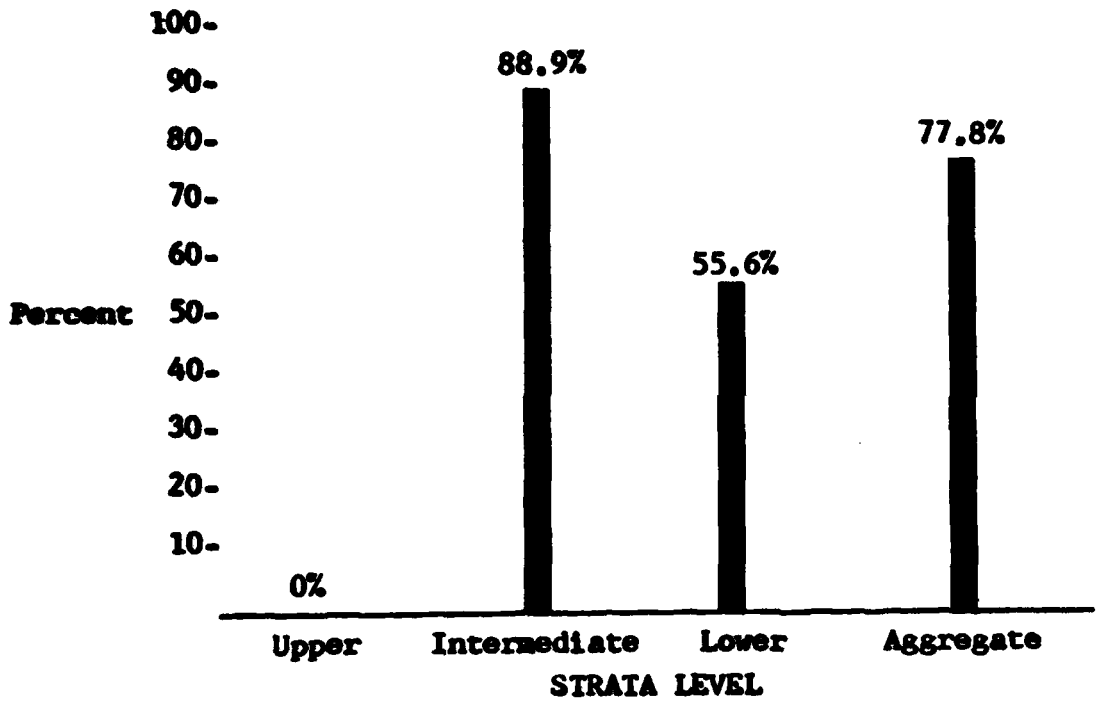
To what extent do you perceive a difference between the formal mission responsibilities of the organization you supervise, and the actual day-to-day organization's tasks?

(1) To a very little extent
(2) To a little extent
(3) To some extent
(4) To a great extent
(5) To a very great extent

	STATISTICS		
Strata Level	Mean	Mode	Standard Deviation
UPPER	1.6364	1	0.9244
INTERMEDIATE	2.2500	2	1.0408
LOWER	2.3870	2	1.0856
AGGREGATE	2.2714	2	1.1023



AAD CODE MATCH PERCENTAGE--BY LEVEL



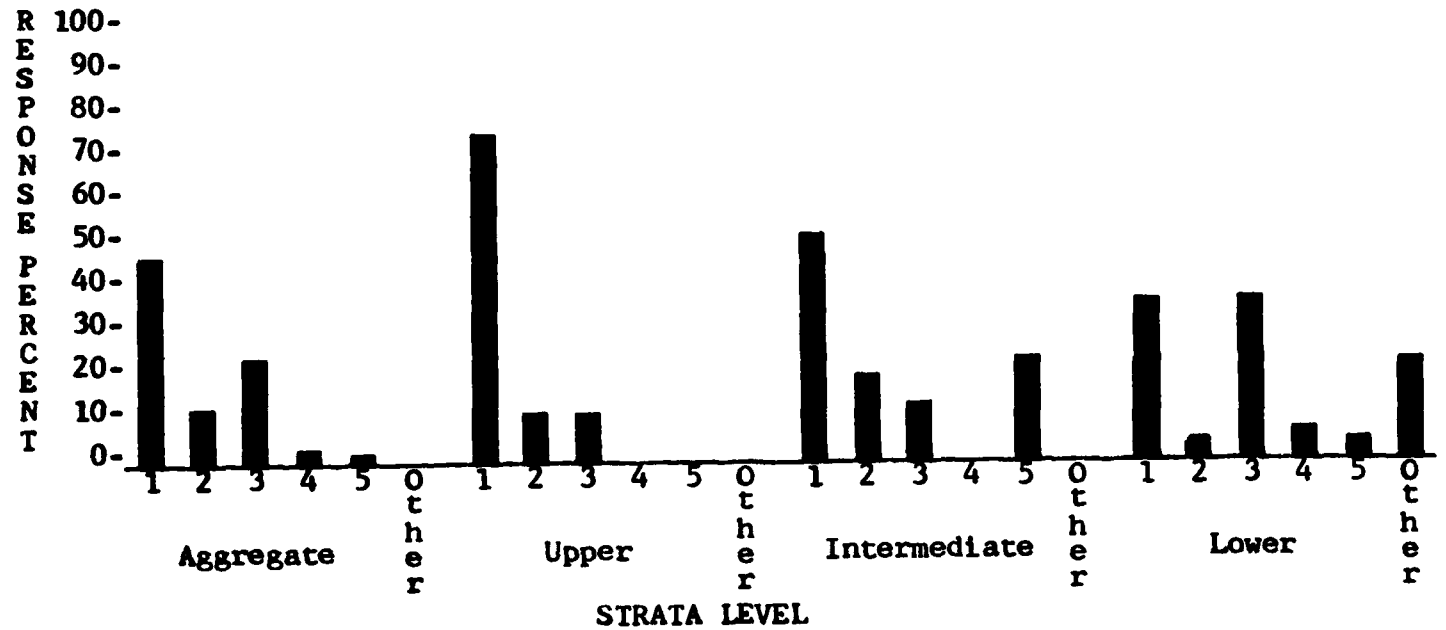
SURVEY QUESTION 7

To what extent do you believe advanced academic degree (AAD) coded slot mismatches within your organization, if any, impact the problem solving, analysis, policy formulation, synthesis, and evaluation capabilities of your organization?

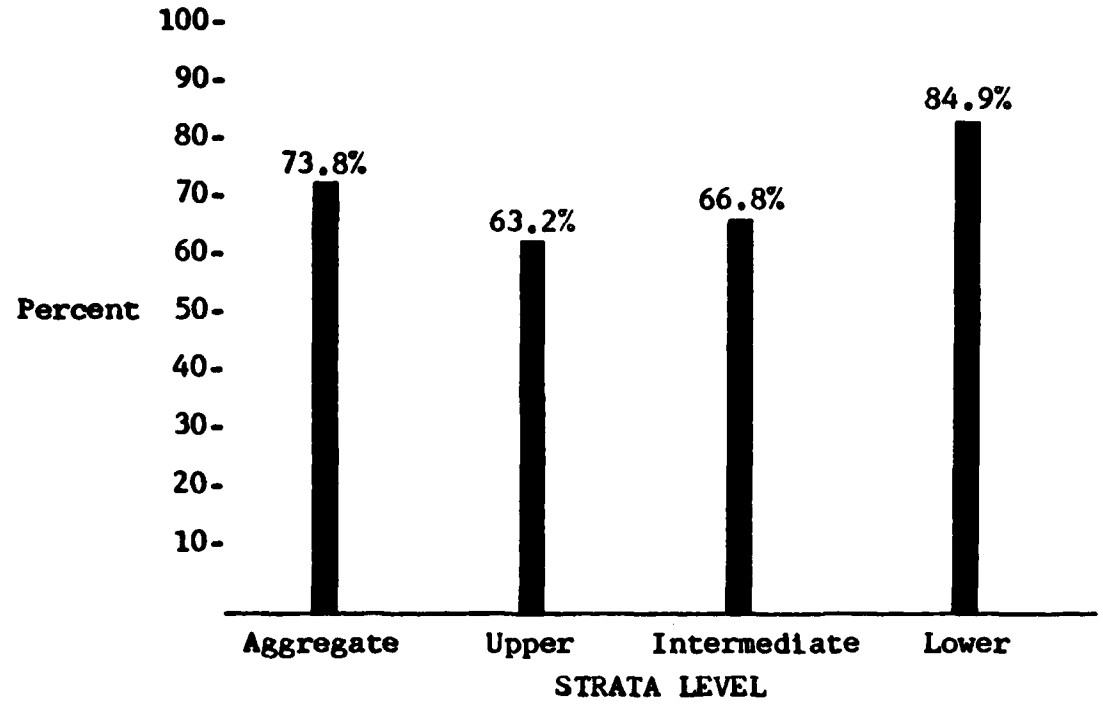
(1) To a very little extent
(2) To a little extent
(3) To some extent
(4) To a great extent
(5) To a very great extent

STATISTICS

Strata Level	Mean	Mode	Standard Deviation
UPPER	1.3000	1	0.6750
INTERMEDIATE	1.6250	1	0.8242
LOWER	2.3200	1 & 3	1.2492
AGGREGATE	1.8393	1	1.0579



AGGREGATE AFALD ASSIGNED CIVILIAN-TO-MILITARY PERCENTAGE



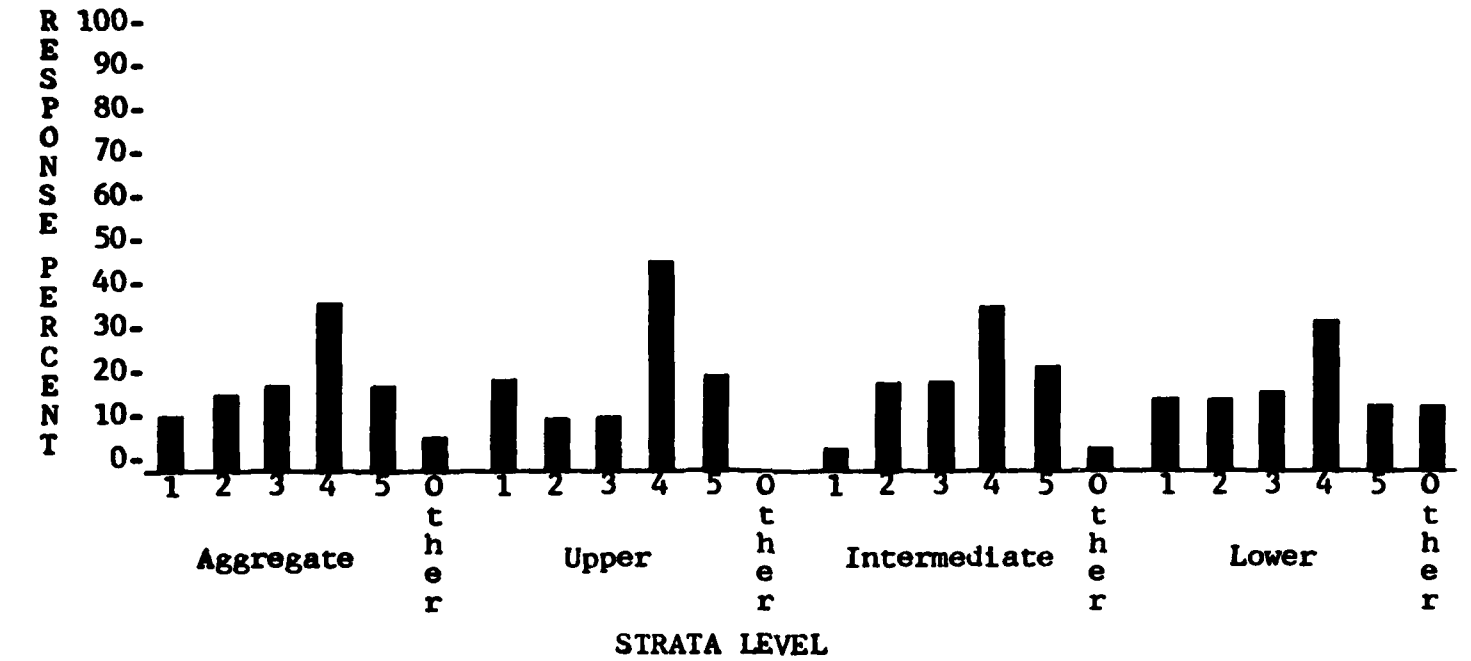
SURVEY QUESTION 8

To what extent do you consider that the civilian-to-military ratio of the organization you supervise is appropriate for meeting your organization's mission responsibilities?

(1) To a very little extent
(2) To a little extent
(3) To some extent
(4) To a great extent
(5) To a very great extent

STATISTICS

Strata Level	Mean	Mode	Standard Deviation
UPPER	3.3636	4	1.4334
INTERMEDIATE	3.5562	4	1.1547
LOWER	3.2222	4	1.3107
AGGREGATE	3.3485	4	1.2829



SELECTED BIBLIOGRAPHY

A. REFERENCES CITED

1. Baldwin, William G. Chief, Resources Control Office, AFALD/MO. Wright-Patterson AFB OH. Personal interviews between 10 January and 20 May 1981.

2. Burke, V. History of the Air Force Acquisition Logistics Division (AFALD), Calendar Year 1976. Wright-Patterson AFB OH: Office of History, AFALD, 1978.

3. Campbell, Donald T., and Julian C. Stanley. Experimental and Quasi-Experimental Designs for Research. Chicago: Rand McNally College Publishing Co., 1966.

4. Carter, Major Robert L., USAF. Resources Control Office, AFALD/MO. Wright-Patterson AFB OH. Telephone interview. 25 March 1981, and 23 May 1981.

5. Clover, Vernon T., and Howard L. Balsley. Business Research Methods. Columbus, Ohio: Grid, Inc., 1974.

6. Frederick, Colonel Philip K., Jr. Chief, Education Program Division, HQ AF/MPPE. Letter, subject: Percentage-Based Requirements Determination System, to HQ AFIT/SL, 19 September 1980.

7. Gorski, Captain John, USAF. Manpower Resources Office, HQ USAF/MPMR. Washington, D.C. Telephone interview. 18 May 1981.

8. IRC Symposium. Manpower and Planning. New York: Industrial Relations Counselors, Inc., 1970.

9. Lee, Lamar, Jr., and Donald W. Dobler. Purchasing and Materials Management: Text and Cases. New York: McGraw-Hill Book Co., 1977.

10. Long, Captain James, USAF. Manpower Office, HQ USAF/MPMP. Washington, D.C. Telephone interview. 11 May 1981.

11. U.S. Department of the Air Force. Air Force Logistics Command Fact Book. HQ AFLC/ACM. Wright-Patterson AFB OH, FY 1980.

12. U.S. Department of the Air Force. Organization and Mission-Field, Air Force Acquisition Logistics Division (AFALD). AFLCR 23-17. Washington: Government Printing Office. 14 July 1980.

13. U.S. Department of the Air Force. Extended Unit Manpower Document, PCN SE511-180, Manpower File Part: A. HQ AFLC/DP. Wright-Patterson AFB OH, 10 April 1981.

14. Webster's New Seventh Collegiate Dictionary. Springfield, Massachusetts: G. and C. Merriam Co., 1972.

B. RELATED SOURCES

Adams, John. Manpower Planner, Detachment 1, 3075th Management Engineering Squadron, AFLC/DPQW, Wright-Patterson AFB OH. Personal interview. 24 October 1980.

Bartholomew, David J., and Andrew F. Forbes. Statistical Techniques for Manpower Planning. New York: John Wiley and Sons, 1979.

Blom, Captain Robert, USAF. Manpower Specialist, Manpower and Organization Office, HQ AFLC, Wright-Patterson AFB OH. Personal interview. 24 october 1980.

Burk, V. AFALD Historian, Air Force Acquisition Logistics Division (AFALD), Wright-Patterson AFB OH. Personal interview. 15 October 1980.

Burk, V., and T. McKenzie. History of the Air Force Acquisition Logistics Division (AFLC), Calendar Year 1977. Wright-Patterson AFB OH: Office of History, AFALD, 1979.

Burk, V., and T. McKenzie. History of the Air Force Acquisition Logistics Division (AFLC), Calendar Year 1978. Wright-Patterson AFB OH: Office of History, AFALD, 1979.

Carus, Colonel G. A., USAF. Chief of Staff, Air Force Acquisition Logistics Division (AFALD), Wright-Patterson AFB OH. Personal interview. 24 October 1980.

Charnes, A., W. W. Cooper, and R. J. Niehaus, eds. Management Science Approaches to Manpower Planning and Organization Design. New York: North Holland Publishing Co., 1978.

Chirikos, T., M. G. Finn, and S. C. Kelley. Manpower Forecasting in the United States: An Evaluation of the State of the Art. Columbus OH: Ohio State University, 1976.

Christal, R. E. "Comments by the Chairman"; Morsh, "Jobs in the U.S. Air Force," in Proceedings, American Psychological Association, 1969.

Conference Board in Canada, The. Corporate Manpower Planning in Canada: Trends and Prospects. New York, 1976.

Emory, William C. Business Research Methods. Homewood IL: Richard D. Irwin, Inc., 1980.

Gass, S., ed. Manpower Planning Models. New York: North Holland Publishing Co., 1977.

Glueck, William F. Personnel, A Diagnostic Approach. Texas: Business Publications, Inc., 1978.

Greenlaw, P. S., and R. D. Smith. Personnel Management: A Management Science Approach. Pittsburgh: International Textbook Co., 1970.

Grinold, Richard C. "Manpower Planning with Uncertain Requirements," Operations Research, May-June 1976.

Grinold, Richard C., and Kneale T. Marshall. Manpower Planning Models. New York: Elsevier North-Holland, Inc., 1977.

Lee, S. M., and C. Thorp, Jr. Personnel Management, A Computer Based System. New York: Petrocelli Books, 1978.

Morsh, J. E. "Collecting, Analyzing and Reporting Information Describing Jobs in the U.S. Air Force," in Proceedings, American Psychological Association, 1969.

Niehaus, R. J. Computer-Assisted Human Resources Planning. New York: John Wiley and Sons, 1979.

Parten, Mildred. Surveys, Polls, and Samples: Practical Procedures. New York: Cooper Square Publishers, Inc., 1966.

Ovalle, Major Nestor K., 2nd, USAF. Instructor in Management, School of Systems and Logistics, Air Force Institute of Technology, Air University, Wright-Patterson AFB OH. Personal interview. 24 October 1980.

Sadler, P. J., ed. Manpower Aspects of Automation and Technical Change. France: Manpower and Social Affairs Directorate, 1966.

Schneider, B. Staffing Organizations. Los Angeles: Goodyear Publishing Company, Inc., 1976.

Scoville, James G. Manpower and Occupational Analysis: Concepts and Measurements. Boston: D. C. Heath and Company, 1972.

Shafritz, Jay M., and others. Personnel Management in Government. New York: Marcel Dekker Inc., 1978.

Sylvia, Robert. "Toss: An Aerospace System That's Go for Manpower Planning," Personnel, January-February, 1977.

Taylor, James C., and David G. Bowers. Survey of Organizations. Ann Arbor MI: Institute for Social Research, The University of Michigan, 1974.

U.S. Department of the Air Force. The USAF Manpower and Personnel Plan (USAFMPP). AFR 8-12. Washington: Government Printing Office, 17 August 1979.

U.S. Department of Labor, Manpower Administration. Handbook for Analyzing Jobs. L 1.7/2:J57/6, U.S. Government Printing Office, 1972.

U.S. Department of Labor. Job Grading System for Trades and Labor Occupation. Washington: Government Printing Office.

Vetter, Eric W. Manpower Planning for High Talent Personnel. Michigan: University of Michigan, 1967.

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